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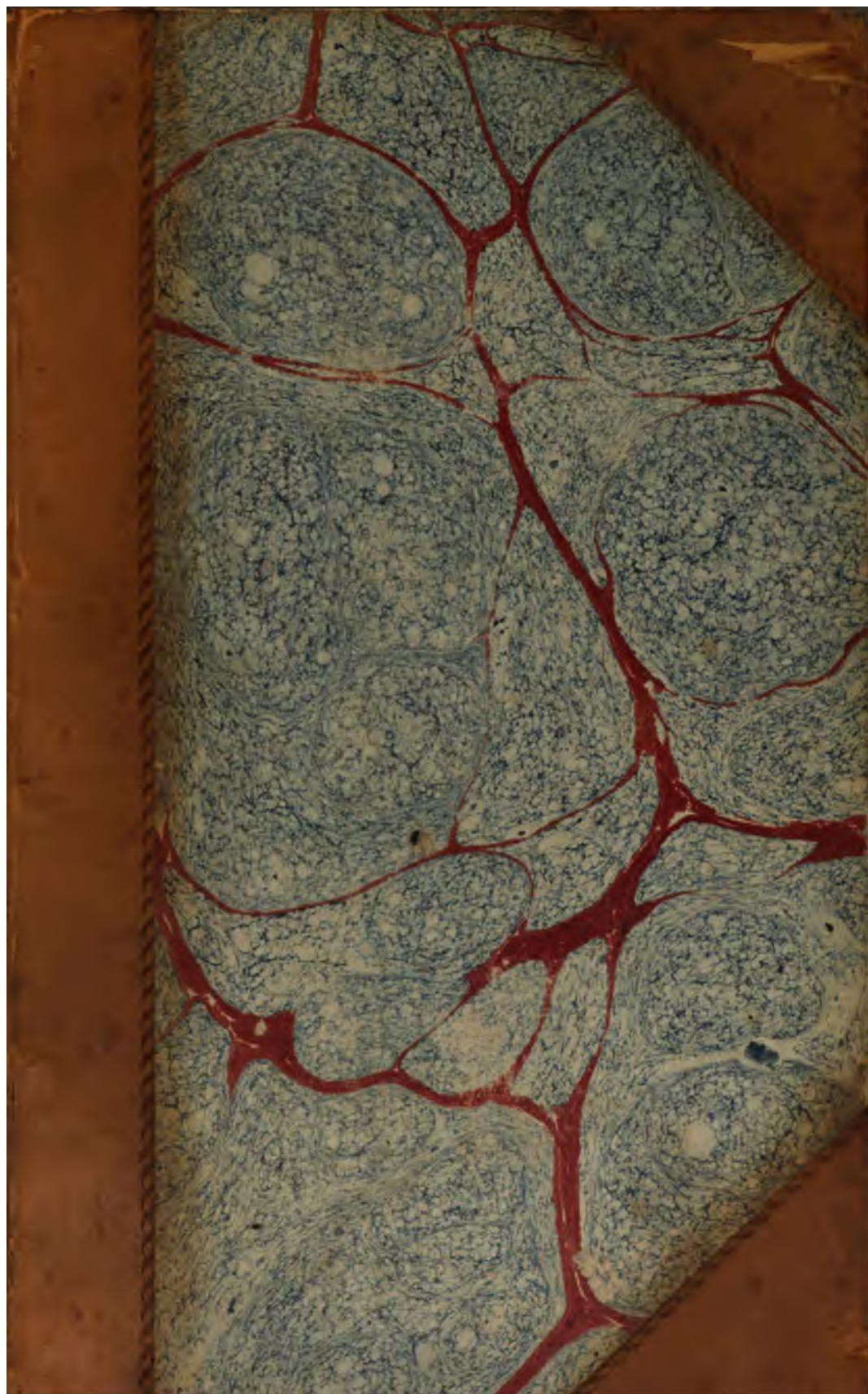
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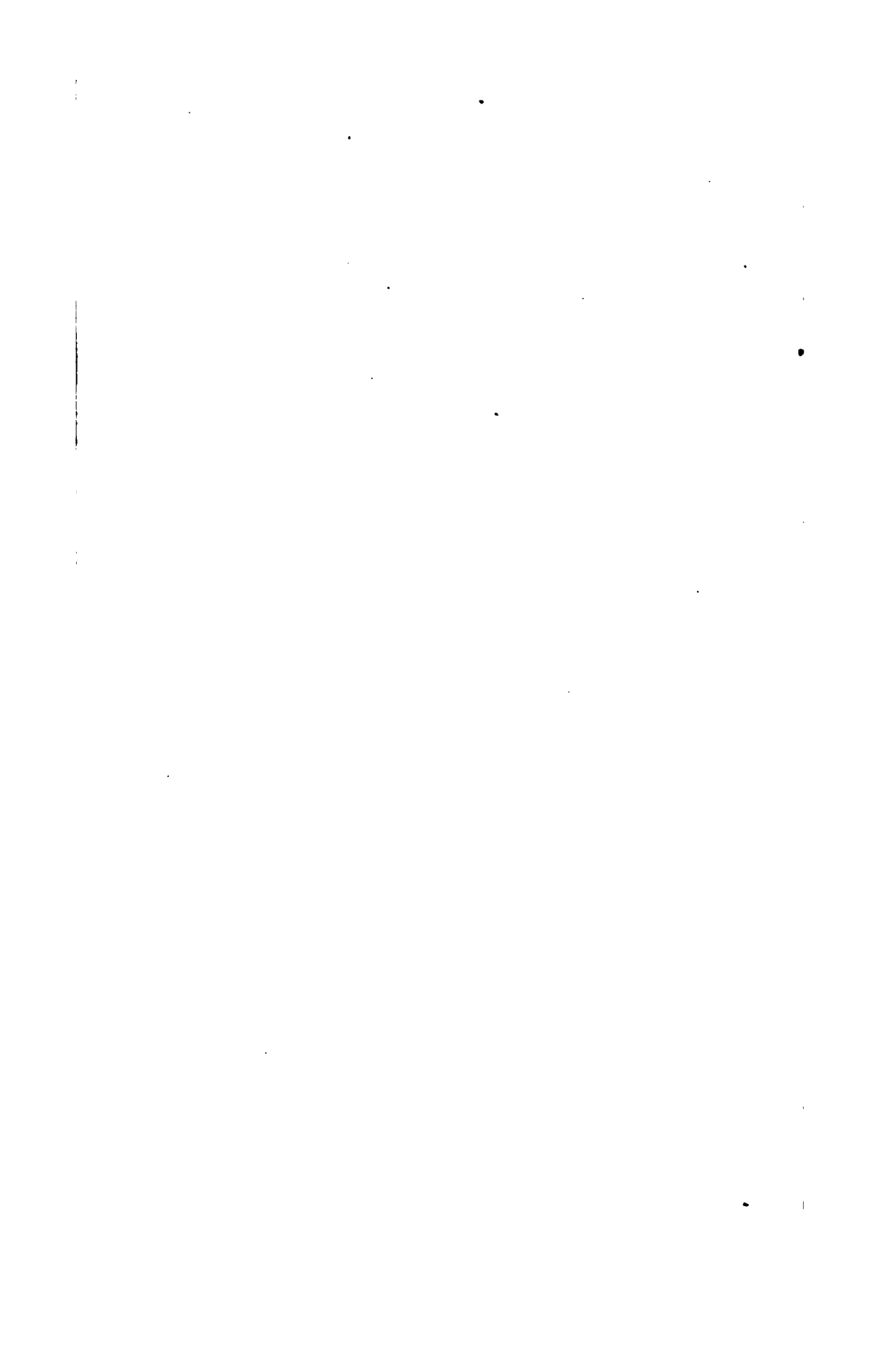
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THE
MEDICO-CHIRURGICAL
REVIEW,
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JOURNAL
OF
PRACTICAL MEDICINE.

(NEW SERIES.)

VOLUME THIRTY-FOUR,

[1st of OCTOBER, 1840, to 31st of MARCH,]

1841.

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By JAMES JOHNSON, M.D.

PHYSICIAN EXTRAORDINARY TO THE LATE KING,

AND

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THIS admirable Society is increasing in extent and honour, and, certainly, not retrograding in usefulness. All other societies, in this Kingdom, may own without a blush its superiority, and its European reputation is of a high order. To be a member of it, is courted as a distinction, and to be a contributor to its Transactions is a guarantee of merit.

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The contents of the work are as follows:—

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opened; by R. A. Stafford.—16. On the structure of the human placenta, and its connexion with the uterus; by William Bloxam.—17. Termination of the case of William Chandler, afflicted with dry gangrene, of which an account was published in the twenty-second volume of the Transactions; by S. Solly.—18. Observations on injuries of joints, and their treatment; by Rutherford Alcock.—19. On aneurisms, and especially spontaneous varicose aneurisms of the ascending aorta, and sinuses of Valsalva, with cases; by John Thurnam.—20. Case of a rare species of hydatid, the *echinococcus hominis*, found in the human liver; by T. B. Curling.—21. Observations on the mode of union of fractured bones; by R. H. Meade.—22. Case of aneurism of the *arteria innominata*, in which the carotid and subclavian arteries were tied; by W. Wickham.—23. Case of tumour in the pelvis, impeding parturition; by J. C. W. Lever.

We shall take the Papers as they come, and notice them *seriatim*.

I. A CASE OF STRANGULATED HERNIA, IN WHICH THE BOWEL WAS RUPTURED BY THE PATIENT IN HIS EFFORTS TO REDUCE IT. By BENJAMIN TRAVERS, Esq. F.R.S.

Mr. Travers is an old and valued contributor. The succeeding case is very interesting.

At 3, a.m. Oct. 29, 1839, Mr. T. was summoned to see a young gentleman, aged 20, supposed to be suffering from strangulated hernia.

Mr. T. found him lying on his back, with a countenance expressive of great suffering and anxiety, his surface pale and chilled, eyes and lips livid, legs drawn upwards, pulse at the wrist imperceptible, and the heart's action rapid and indistinct. He had vomited several times, but had passed a motion at four in the afternoon of the preceding day. The scrotum was enlarged to the size of a young child's head, and discoloured of a gangrenous hue; the skin distended as if about to burst. The hypogastrium was swollen and tense, the pain acute, diffused and much increased on pressure.

It appeared that he had recently laboured under gonorrhœa and swelled testicle on the right side, and that he had been the subject of hernia on the same side, from his birth; that he had not worn a truss since his childhood, but was in the habit of lying down and replacing the protruded bowel with his hands, when inconveniently distended in the sac. At six o'clock of the preceding evening the volume of the tumor became so increased, as to oppose a resistance to its return, which the young man could not overcome. In addition to continued violent manipulation, he compressed it forcibly between his hands and thighs, and as if reckless from ill success, actually made a section of the integument with a razor, transverse to the chord. At midnight, he sent for his father, and told him he had burst his testicle, or that something had given way, and if unassisted, he must die. The bulk of the swelling had gone on increasing, from this time, to the period at which Mr. Travers visited him.

Mr. Travers gave him some warm brandy and water to drink, which restored a very slender pulse, and then made an incision in the tract of the spermatic chord, towards the fundus of the tumor. The subcutaneous cel-

lular membrane was throughout infiltrated with a dark-coloured fluid, emitting a feculent odour, and freely oozing from the section. The sub-jacent cremaster tunic was then divided, and the collapsed sac, forming an enormous pouch, divided, and incised on a director: the testis lay exposed and somewhat swollen in its lower part, and a flaccid fold of bowel occupied the mouth of the sac, which on handling the parts, slipped into the belly. The finger passed freely through the dilated canal and upper orifice, round the epigastric vessels, into the abdominal cavity. There was nothing like stricture to be perceived at any part. A single stitch was placed in the edges of the sac, which was condensed on the posterior part, and of a loose cellular texture on the anterior and lateral parts. The divided integuments were also connected by a central stitch, over a dossil of lint; a free incision carried through the raphe scroti posteriorly, exhibited a similar loaded state of the cellular membrane behind, as in front, and extending far beyond the mesial line.

This completed the operation: the fluid had escaped in such quantity as to form a pool in the bed. During the operation the patient threw up some frothy bilious fluid, and very soon afterwards had two pretty copious stools of semi-fluid consistence, and precisely of the same colour as the effused intestinal fluid. Temporary relief was obtained, but at seven p.m. three hours after the operation, he died.

Dissection, ten hours after death.—The abdominal muscles were rigid, and a vast quantity of offensive flatus escaped on making the ordinary section, and through the scrotal wound. On tracing the small gut, a portion of the lower third of the ileum, equal to a hand's breadth in extent, presented the appearances of recent strangulation, accompanied with laceration, and extravasation of blood between the peritoneal and muscular coats. The fold was collapsed, of a claret colour, bounded by a faint ash-coloured streak at either end, and presenting three or four insulated grey spots of incipient gangrene. An irregular aperture, three-fourths of an inch in length, was found adjacent to the mesenteric attachment, and parallel to the axis of the bowel; and immediately contiguous to this wound, the serous membrane was detached from that beneath it to the extent of an inch, so as to exhibit the circular fibres of the muscular coat, as if dissected. Minute clots of blood were lying in this space, and some extravasation had taken place between the layers of the corresponding mesentery. The neighbouring small intestine was at several points inflamed, and congested even to extravasation beneath the peritoneal investment; liver reduced as if shrunk in bulk; its surface of a dark green hue, and slightly roughened. On section, it was tougher and paler than this tissue ordinarily is in youth and health.

In some excellent observations on this case, Mr. Travers remarks that it was an instance of "*hernie par engouement*," the strangulation having resulted from the loaded state of the intestine—an accident to which all those who wear no truss are of necessity liable. The great violence employed accounts for the rupture of the gut, though not previously diseased.

Mr. Travers alludes to the circumstances under which rupture of the gastro intestinal tube may occur.

"I have known the intestine ruptured in the taxis, but it was ascertained that the stricture included two-thirds only of the cylinder, which was sloughy and separating by ulceration.

A man received a violent blow from a hammer on the pad of his truss, while stooping, by which the bowel was ruptured. This event was favoured by position, but could not have happened had the truss been efficient.

From compression, as by a wheel passing over the body, or pinning it against a wall, from the kick of a horse, from a fall across a beam, from running violently against a post in the dark, and similar causes, I have known the bowel ruptured; sometimes in more places than one, and sometimes complicated with lesion of the liver, spleen, or kidney, without breach of the walls of the abdomen. Distorted muscular action is sufficient to produce rupture of the stomach in a loaded state, as I witnessed many years ago in the case of a tumbling boy, who a few minutes before had been partaking freely of apples and gin, which were effused.

I never knew a case of ruptured intestine from vomiting or muscular action, unless ulcer had previously existed, by which the internal tunics were destroyed; in this case the peritoneum covering the aperture is probably burst, for the symptoms of effusion commence almost simultaneously with the act of vomiting. This act, I may observe, is abridged and impeded after rupture of the canal at any part; it is half vomiting and half expectoration, as if the muscles had lost their fulcrum, which is in fact the case; the fluid rises into the fauces, and is with a convulsive effort spit out of the mouth." 8.

Mr. Travers' account of the symptoms is graphic and concise. They are death-like, he says, from the moment of the injury. The mind is clear but depressed, as if overwhelmed by the irreparable nature of the injury. The countenance is pale and the features liny and drawn. The pulse is not immediately affected, but soon becomes quick, feeble, and irregular in its measure, intermitting, thready, and then no longer to be felt. The surface chills, but remains dry; there is a painful sense of dryness of the mouth and fauces, and frequent efforts to vomit in the way before described. Pain, which commences at variable periods, but is never long delayed, is acute, unremitting, extending over the whole abdominal region, which becomes tense and will not bear the slightest pressure. This produces great anxiety and restlessness, and frequent appeals for relief, and next for death. The peritoneal surface is reddened, but there is seldom any effusion of membranous or massive lymph agglutinating parts; only small deposits in tags and shreds roughening the surface, although the period of survival varies from twelve to six-and-thirty hours; the state of the canal perhaps determines this variation.

He naturally refers the prostration, &c. rather to the noxious effect of the effused intestinal air and contents on the nervous and absorbent tissue of the peritoneum. He has seen *pain* so little marked, as to lead to a doubt in diagnosis. With regard to treatment he has nothing to suggest, unless it be an absolute negation of food and diluent.

Mr. Travers next relates two cases with the view of urging his objections against the plan of leaving the sac unopened in the operation for hernia.

In the *first* case that proceeding was perfectly successful.

The *second*, was one of femoral hernia, in a man aged 55. The symptoms of strangulation had existed for three days. The usual means of relief having failed, the operation was done without delay. There was found, beneath a suppurating lymphatic gland, a small and very tense sac. The fibres of the crural arch were divided upon the point of the finger; but it was found necessary to carry the probe-pointed bistoury under the arched fibres of the fascia transversalis, in order to liberate the contents of the sac, which

returned with a gurgling noise into the belly. The return of the gut, and collapse of the sac, were perfect and satisfactory; the latter was in consequence not opened. The patient was imperfectly relieved; vomiting continued at intervals throughout the rest of the day and night, although several scanty, dark, and scybalous stools were obtained by injection, and small doses of aperient salts.

Evacuations continued, but on the fourth day bilious vomiting recurred, followed by abdominal pain, and constitutional depression. On the eighth day he died.

Dissection twelve hours after death.—Stomach distended; small intestines moderately full; peritoneum presented some red specks at the angles of contact of the intestinal folds. A portion of the tube of the ileum was disorganised, being an ash-coloured rag; but an adhesion at the mouth of the sac included this piece, so that it was not seen on opening the abdomen, nor until the adhesion gave way, when a quantity of pulaceous feculent matter passed into the pelvis. Another fold of intestine adhered to the sound side of this, and supported it against the ring. A portion equal to one third of the canal of the strictured gut was sound, and freely admitted the passage of a bougie, and by this route the feculent matter had passed from the upper to the lower part of the tract. On the mouth of the sac was deposited a lip or elevated border of lymph, corresponding to the line of separation of the slough from the living edge, so that no effusion into the belly could have taken place.

Mr. Travers observes that an artificial anus would probably have saved the man. But not only, he adds, was no benefit gained, but the separating process was retarded by the integrity of the peritoneal sac. Had this been opened by the ordinary incision at the time of operation, both the sloughing and the adhesive process would have been so much accelerated, as to have established the artificial anus in time for the patient's relief, and ultimately, perhaps, the continuity of the canal.

The following are Mr. Travers' opinions on the operation we have been discussing.

"I believe that the advantage is altogether hypothetical which is supposed to accrue from preserving the sac entire, in cases where the gut is simply paralysed, and unable to resume its function, the ordinary cause of failure of the operation for hernia; and that the practice is decidedly disadvantageous in all cases where inflammation is of such standing as to have endangered the continuity of the canal; for of such cases, doubtful as is the alternative, the only chance of recovery is in the speedy relief of the symptoms by artificial anus. The incision of the sac establishes at once a free fistulous opening into the peritoneal cavity, and identifies it with the external wound, which materially quickens the separating, and strengthens the fastening process; the spoiled bowel being left *in situ* at the mouth of the sac." 16.

"But not to insist upon the numerous cases in which the seat of stricture or the existence of adhesions does not permit us to leave the sac entire, the practice is objectionable, on the ground that where the stricture is of such firmness as to require the aid of the knife, we can never know the actual state of the bowel, with which it is the paramount duty of the surgeon to make himself acquainted, that he may regulate his proceedings accordingly." 17.

We fancy there can be no doubt of the occasional success, indeed propriety, of leaving the sac unopened. But the uncertainty that attends it, the

possibility, however slight, of leaving a source of mischief uncontrolled, and the questionable aggravation of risk which opening the sac occasions, will always tend to limit the employment and patrons of the measure.

The next observations are, it seems to us, extremely just.

"I have adverted to the paralysed condition of the strangulated bowel, as the ordinary cause of death after the operation for hernia. This opinion, which I published near thirty years ago, has been fully confirmed by my larger experience; yet it is not, I believe, generally entertained. Death is ascribed to the inflammation of the general cavity, where gangrene of the gut has not supervened upon its replacement: but in how few cases does inflammation prove intractable, when the operation is followed by full evacuations, demonstrating the re-establishment of the canal. I have repeatedly seen patients, after operation, in whom the symptoms of inflammation were feebly, if at all, indicated, and have inspected many 'post mortem,' in whom no agglutination interfering with the function of the bowel had taken place, or other explanation of the continued obstruction showed itself, than the utter atony of the congested bowel, which had been replaced; marked by its precise interposition to the flatulent portion of the tube above, and the collapsed piece below." 18.

We believe that this opinion is now obtaining a general assent among all well informed surgeons,

Mr. Travers speaks favourably, and surgeons will generally, we think, echo his opinion, of the effects of calomel both in cases of inflammation of the bowels, and of that paralysed state of it which has been referred to. In the latter instance, it stimulates the liver, and promotes that downward flow of bile, which being the most natural is, perhaps, also the best stimulus to the bowel.

II. OBSERVATIONS ON THE BLOOD-CORPUSCLES AND PUS-GLOBULES IN CERTAIN ANIMALS. By GEORGE GULLIVER, Esq. &c. &c.

Since the time of John Hunter, it has been supposed that the globules of pus are merely the red particles of blood, deprived of their colouring matter, and modified in form and size by the inflammatory process. But Müller and Dr. Güterbock have doubted this, and Mr. Gulliver has lately been setting himself to work to determine it. He found this, however, no easy matter, and the following admission which winds up some experiments on the pus of the dromedary, the paco, the guanaco, or wild lama, and the vicugna (all mammals with elliptical blood disks, and therefore, by reason of this peculiarity, well calculated, apparently, to determine the connexion between *them* and the pus-globules), will shew that the question is still to be decided.

"Without asserting the impossibility of a transformation of the blood-disk into the globule of pus, it can hardly be supposed that any such change took place in the experiments recorded in this paper. This question, however, appears to me to be one of more difficult solution by mere microscopic observation than would be supposed by any one who had not specially examined the subject; for the blood-corpuscles are so singularly susceptible of modifications in form, size and general characters from very slight agency, that examples might readily be shown of their approximation in appearance to the globules of pus. The action of water on the blood-disks of the mammalia, as well as of the lower vertebrate animals, has been well known since the time of Hewson.

Now, however, that so much attention is devoted to the constitution of the healthy as well as morbid animal fluids, the relation, if any, between the blood corpuscles and the particles of the secretions will probably be soon finally determined. From my observations it appears that the blood-disks of the goat are by no means the smallest among the mammalia, as had been previously supposed, but that the blood-corpuscles of the napu musk deer, and probably of its congeners, are so singularly minute that their average diameter is between $\frac{1}{1000}$ th and $\frac{1}{1500}$ th of an inch. It would, therefore, be interesting to examine the pus of an animal of this genus. In the meantime it may be mentioned that I found in the blood of the musk deer several large white spherical bodies, similar to those observable in the blood of other animals, and that the lymph globules did not differ in magnitude from those of mammals with large blood-corpuscles."

III. ON WHITE SPOTS ON THE SURFACE OF THE HEART, AND ON THE FREQUENCY OF PERICARDITIS. By JAMES PAGET, Esq.

Mr. Paget observes that these spots occur most frequently on the anterior surface of the right ventricle, and are often found tracking out the course of the trunks of its coronary vessels. They are rather more rarely seen on the posterior surface of the right ventricle, and on the right auricle; more rarely still on the left ventricle, and most rarely of all on the left auricle.

With these spots there almost constantly coincides some adhesion, by organised lymph, between adjacent parts of the pericardial membrane, which leads Mr. Paget to regard them as, in all cases, the results of pericarditis.

The adhesions generally consist of slender threads passing across the furrow between the aorta and vena cava superior, or between the aorta and pulmonary artery at some little distance from their connexion with the heart. In other cases, they are attached by one extremity to either of these vessels, and by the other to the opposite surface of the pericardium; and more rarely, though more distinctly, a band of adhesion passes from one of the spots or from some adjacent part of the heart to the opposite surface. Lastly, there may be found only the indications of adhesions that had once existed, in the form of small pearly granules on the surface of the aorta or cava, and on the corresponding surface of the pericardium. They sometimes require so careful an examination to find them that Mr. Paget feels no surprise at their being overlooked.

He finds than in 40 cases in which there were white spots on the heart, 35 have presented anormal adhesions, or their remains. In 5 cases only were the adhesions absent, and in 4 cases only an adhesion was found where there were no spots. In the 35 cases with adhesions, they were situated 23 times between the aorta and some other vessel, and 19 times between one of the great vessels and the opposite surface of the pericardium. In four cases he has found a band of adhesion passing from the surface of a spot to the pericardium opposite to it, and Dr. Budd has twice seen a similar formation. In many cases also there is a distinct roughness or radiated puckering, like a superficial cicatrix, on the pericardium opposite the spots. In these it is probable that the spots are indications of the pre-existence of adhesions; but in all other cases Mr. Paget would regard them as the effects of local and defined inflammation, which has been prevented from producing adhesion by the fluid simultaneously effused separating the serous surfaces,

and permitting part of the lymph to sink down to the great vessels, while the rest remained on the surface and in the cellular tissue of the inflamed part.

Mr. Paget thinks the question—whether these spots be seated in or on the pericardial membrane of the heart, one of little moment, this depending on the depth and degree to which the cellular or adipose tissue round the heart is inflamed. He believes that the reason of the frequency of the adhesions about the great vessels is, that in comparison with the walls of the heart, *they* are fixed and motionless, and present every facility for the adhesion and organization of the lymph that is effused, and which either gravitates to them in the recumbent position of the body, or is impelled thither by the currents which the action of the heart excites in the fluid around it.

The white spots have been said to occur “in half, or more than half, of those who are above the age of childhood. M. Bizot found them 45 times in 156 subjects; viz., in 31 out of 72 men, and in 14 out of 84 women; and I have myself found them in 45 cases out of 110; viz. in 32 out of 66 males, and in 13 out of 44 females.” Mr. Paget thinks that both the white spots and the adhesions cannot but be regarded as the effects of inflammation of some part of the pericardium. This he lays down as an axiom.

“Including then the white spots among the effects of pericarditis, I find that of 110 cases which I have lately examined at St. Bartholomew's Hospital, 58 have presented signs of having suffered at some time from that disease. Among these, 40 out of 66 males, and 18 out of 44 females, were thus affected; and with respect to their ages, the morbid appearances were found in 5 out of 14 below twenty; in 25 out of 53 between the ages of twenty and forty; and in 28 out of 43 above forty.

Of these 58 cases of pericarditis, 49 were slight cases, marked by white spots and adhesions, or by effusion of small quantities of lymph; and 9 were severe with complete adhesion, or with abundant recent effusion.

The subsequent effects of the slight cases of pericarditis are not appreciable. In none of them was there any disease of the heart, but such as was sufficiently accounted for by some other coincident affection, as disease of the valves, &c. In three cases of complete and close adhesion of the pericardial surfaces also, in which there was no coincident disease of the valves, the patients were engaged in active work, and died of affections over which the state of the heart had no evident influence. In two other cases of complete adhesion, the valves were diseased, and both these proved fatal; one in three years, and the other in a year after the first attack, which occurred in the course of rheumatism.” 35.

He has not been able to ascertain the circumstances under which these slight affections of the pericardium have happened. He has several times seen such, as an accident of typhus fever, and he thinks it may exist in the course of many diseases. Of the 66 males examined, 24 were known drunkards; and of these 20, had had pericarditis; a proportion sufficient to prove that intemperance and its consequences are among the most powerful excitants of this disease.

This really appears to us to be a paper very creditable to its author. We rather think he is attached to the School of St. Bartholomew's Hospital. We anticipate further communications of value from the same hand. For our own parts we feel quite convinced of the justice of Mr. Paget's conclusions. They give statistical corroboration to an opinion which the analogy of the pleura would render the most probable.

IV.—REMARKS ON EMPHYSEMA OF THE LUNGS. By GEORGE BUDD,
M.D. &c. &c.

It is one of the chief objects of Dr. Budd's paper to show that want of elasticity in the lung—in other words, absence of its natural tendency to collapse,—is the cause of many of the other anatomical characters of emphysema, and of most of the symptoms by which this affection is recognized. He observes, that the *elasticity* of the lung is one of the most efficient, if not the most efficient agent in expiration, the lung collapsing by virtue of it, and the parietes of the chest subsiding.

"One of the first effects of this condition is, that the lungs, and with them the parietes of the chest, do not collapse as they should do in expiration; the powerful muscles of inspiration are continually acting to elevate the ribs and dilate the chest, and have not their natural antagonist. The chest becomes, in consequence, permanently dilated; often beyond the limit attained in the most ample natural inspiration. It is the permanent elevation of the ribs that gives to the chest the cylindrical form, and, by raising in turn the shoulder-blades and collar-bones, that produces the high shoulders of asthmatic persons.

When this conformation of the chest is attained, its capacity cannot be much further increased by the action of the muscles, which raise the ribs. This circumstance gives a peculiar character to the breathing of persons affected with emphysema; the ribs being permanently raised by the dilatation of the chest, the increased capacity of that cavity which takes place in inspiration is mainly effected by the diaphragm, and the respiration is abdominal. It is owing to this circumstance that the erect posture is more necessary to asthmatics than to persons affected with pleurisy or pneumonia, in whom the respiration is of equal, or even greater, frequency; and that dyspepsia, by causing flatulence and distension of the stomach, and so opposing the descent of the diaphragm, is so often the cause of a fit. The attack of the paroxysm in the night—a peculiar feature of asthma—seems to result, not from the state of sleep, but from the horizontal posture, which causes impediment to the descent of the diaphragm. The abdominal character of the breathing is still further increased by the circumstance that the portion of lung in contact with the diaphragm is not so subject to emphysema as others. This character of the breathing is very conspicuous in horses affected with emphysema, on account of the shortness of their flanks, and is well known to horse-dealers as a sign of broken-wind." 41.

Another circumstance, is the almost fixture of the ribs, which remain comparatively motionless amongst all the dyspnoea.

The *cough* of asthma is peculiar. We may observe that the parietes of the chest are little affected by it, and that it is short and interrupted; a circumstance the more distressing because the catarrh, to which persons affected with emphysema are habitually subject, is attended with a copious secretion from the bronchial membrane. The efforts of cough being ineffectual, and the irritation of the mucus remaining, the cough repeats itself in *fits*. Thus, in this distressing complaint, not only is less air than natural admitted to the internal surface of the lungs, but that surface is also sheathed from its action by a copious secretion which the cough is inadequate to detach. Catarrh, then, is the great enemy of the asthmatic, and change of climate the great remedy.

When the emphysema is less considerable, or only partial, of course its influence will be proportionably less. The emphysematous portion acting less, the healthy must act more. The air entering the former imperfectly produces a feeble respiratory murmur. Less blood too passes to the morbid lung. Dr. Budd insists on this, quoting two cases of Laennec's, and one of his own in illustration. We may introduce the latter.

In the winter of 1837, a man was admitted into the Dreadnought, affected with general emphysema of the lungs and pulmonary catarrh. He died in a state of asphyxia soon after admission.

The lungs were found extremely dry and pale; there was dark blood in the large veins of the lungs; but, except from these, scarcely a drop of blood escaped when free incisions were made in all parts of the lung. There was no pneumonia, but the small bronchial tubes contained yellow puriform mucus.

He adds:—

“These cases are very striking; for what can be more remarkable than to find paleness, dryness, and absence of congestion in the lungs of persons who have died in a state of asphyxia; the well-known and most marked effect of that condition being the greatest possible congestion of the lungs! The conclusion is, therefore, peremptory, that during life the natural vascularity of the lungs, at least as regards the pulmonary artery, was much diminished. This restriction is necessary; since, in the cases referred to, the bronchial membrane was red and turgid. The coincidence of the pale, aneuric condition of the pulmonary tissue, with the congested state of the mucous membrane of the bronchial tubes, in the same lung, is worthy of observation, as showing an essential difference between bronchitis and pneumonia—a difference which has its origin in the different purpose and distribution of the bronchial and pulmonary arteries.” 46.

One effect of this condition of the lung is imperfect arterialization of the blood, and, consequently, diminution of animal heat.

Another consequence of this diminution of the capillary system of the pulmonary artery, is obstruction to the circulation through it: whence arise dilatation of the right cavities of the heart, and the tendency to general œdema, which is so frequently met with in emphysematous persons.

Dr. Budd alludes again to broken wind in horses, and shews, from twenty dissections, its dependence on emphysema of the lungs.

Mr. Jackson found that, of twenty-eight persons affected with emphysema of the lungs, he found that eighteen were the offspring of parents (father or mother) affected with the same disease, and that several of these had died in its course. In some instances, the brothers and sisters of these persons were also emphysematous. On the other hand, of fifty persons not affected with emphysema of the lungs, three only were the offspring of emphysematous parents: whence it follows that emphysema is very frequently an hereditary disease. A fact important both to “man and horse,” at all events, to the breeder of the latter.

Mr. Budd alludes to the opinion of Laennec that bronchitis is the ordinary cause of emphysema, the mucous secretion opposing the free exit of air—and to Louis, whose dissections and researches disproved this frequent antecedence of bronchitis. He adds—

"Laennec was right in supposing that dilatation of the air-cells is occasioned by an obstacle to the free escape of their contents; but he was wrong in believing this obstacle to exist generally in the bronchial tubes. Louis was correct in stating that emphysema often comes on without the previous occurrence of bronchitis; but he was, I believe, in error, when he ascribed dilatation of the air-cells to a cause different in its nature from that which produces dilatation of other organs. Dilatation of the air-cells, like dilatation of the chest, is a necessary consequence of want of elasticity of the lung. The powerful muscles of inspiration are continually acting to dilate the chest, and thence, by virtue of atmospheric pressure, the air-cells. This agency is not counteracted as it should be, by the natural elasticity of the lung; and the air-cells, as well as the cavity of the chest, are in consequence permanently dilated.

I have already shown that the other anatomical characters of emphysema, together with most of the symptoms of this disease, result from the same cause; and I am, therefore, led to consider the absence of elasticity* of the pulmonary tissue as the fundamental character and primary condition of emphysema of the lungs." 53.

Such is Dr. Budd's view. We may be permitted, however, to remark that no proof is offered in support of it. The emphysematous lung is less elastic than it should be, but is that elasticity the consequence of the emphysema, or the emphysema of it, or do they play into one another's hands?

Dr. Budd next passes to the subject of asthma.

This has been generally ascribed to constriction of the small bronchial tubes, from spasm of the circular fibres surrounding them. But Dr. Budd, with others, disputes the muscularity of the fibres in question. To satisfy himself, he performed, some experiments with the assistance of Mr. Busk.

A rabbit, between two and three months old, was killed by a smart blow behind the ears. As soon as its struggles were over, the trachea was taken out, and the anterior part of the cartilaginous rings removed by the scissors, in order that any motion produced by the transverse fibres at its posterior part might be more readily seen. When a portion of the trachea, thus prepared, was placed on a plate, not the slightest movement could be seen in it, nor could any be excited by the wires of a galvanic battery. One of the lungs was then removed, and placed on the plate, between two and three minutes after the struggles of the animal had ceased. The end of the bronchi in which the lung terminated, was obstructed by light froth. No motion could be observed in this froth, or in the lung, before or after the wires were applied to different points on the surface of the lung, neither could any motion be perceived, when the lung was cut into, and the extremities of the wires were placed near one of the bronchial tubes.

The abdomen was opened at the end of five minutes, when the muscular fibres of the stomach and intestines were seen to contract slowly, but very

* "Magendie ascribes the difficulty of breathing in emphysematous persons and in broken-winded horses, to want of elasticity of the lung, but he does not attribute the dilatation of the air-cells to the same cause: on the contrary, he says, 'par suite de la rupture d'un certain nombre de cellules, et de la dilatation d'un certain nombre d'autres, le tissu de l'organe a perdu de son élasticité, et il ne réagit plus avec une énergie suffisante sur l'air qui a pénétré dans son parenchyme.'" *Leçons*, t. i. p. 169.

distinctly, under the galvanic influence. At the end of ten minutes, these contractions were no longer perceptible; but vigorous contractions could still be excited in the heart, and in the muscles of the larynx.

Another rabbit, of the same age as the former, was killed in the same manner; one of the lungs was taken out as quickly as possible, and placed on the plate. Not the slightest movement could be observed in it, nor could any be excited by placing the wires of the battery at different points of its surface, or in contact with the bronchial tubes. The trachea was then removed, and treated as in the former experiment, and with the same result. The abdomen was next opened, the intestines were moving from peristaltic action. The muscles, both of the intestines and of the stomach, which was distended, contracted very distinctly when galvanism was applied. At the end of ten minutes from the death of the animal, these contractions were no longer discernible; but more than half an hour after, contractions could be excited in the heart, and in the muscles of the larynx.

Passing over some objectionable experiments of Varnier's, Dr. Budd refers to Wedemeyer's, one of which is thus described by Müller.

"Wedemeyer laid bare the trachea in a living dog, and freed it from cellular tissue for the space of two inches: he then cut out a portion in front, and irritated the posterior wall of the trachea mechanically and by galvanism, but could not produce the slightest contraction. Wedemeyer now opened the thorax quickly, and removed the lungs with their bronchi. He made several sections of the larger bronchi, but could discover no sign of contractility in them. On applying galvanism, however, to the smaller branches of about one line in diameter he thought he saw them undergo a distinct contraction, but it took place very slowly." 58.

Dr. Budd observes:—

"This experiment of Wedemeyer, as far as the trachea and larger bronchi are concerned, agrees with those that I have before related: and together they seem to establish that no contractions can be excited in those tubes by galvanic influence. This point, if admitted, affords an almost conclusive argument against the muscularity of the smaller tubes. For the transverse fibres in smaller tubes have the same arrangement as in the larger, and we cannot suppose them to be of different nature without admitting a break in the law of continuity. The resemblance of the transverse fibres of the bronchial tubes to the muscular fibres of organic life—the chief argument in favour of the muscularity of the former—is certainly more striking for the fibres in the larger than for those in the smaller bronchi. The contraction witnessed by Wedemeyer in tubes of a line in diameter, resulted in all probability from chemical changes, especially the coagulation of albumen, caused by the galvanic influence. Such changes were very manifest in my own experiments. The manner in which I performed the experiment, by placing the wires, not in contact with one of the small bronchial tubes, but at different points on the surface of the lung, affords a much more delicate test of the muscularity of the bronchi. If these were muscular, a great number of them would be excited at once when the wires were placed on the surface of the lung and the galvanic influence diffused through its mass: and their combined effect would be visible in movements of the surface of the lung, or of the froth obstructing the orifice of the terminal bronchus." 59.

Dr. Budd uses another argument. If, says he, the bronchial fibres are muscular, they must be of the involuntary kind. But the external muscles are voluntary. Then there may come a want of accord between the two. For we might will to breathe more quickly, and the bronchial

muscles might not, on the instant, act so. We confess that this objection does not seem so conclusive to us as to its author. The muscles of deglutition are voluntary in the mouth, less under the control of the will in the pharynx, and removed from it in the œsophagus. Yet things go on pretty well, whether we eat fast or slow. Only suppose an association of action through the medium of the nerves, and the difficulty vanishes.

The following reasoning is, perhaps, more conclusive.

"The idea of spasm of the bronchi was suggested to Cullen, and has been generally adopted, from inability to explain in any other way the symptoms of asthma. A little consideration, however, is sufficient to show the improbable nature of this supposition. The large bronchial tubes, and, in man, those even of the fourth and fifth ramifications, cannot be closed by reason of the cartilaginous rings or plates, which wholly or partially surround them. Supposing, then, the circular fibres to be muscular, only very small bronchial tubes could be closed by their action; and the closing of a few of those tubes would only obstruct the passage of air to the small portions of lung to which they lead, and would not cause much difficulty of breathing. The spasm, to explain the symptoms of asthma, must be supposed to affect the small bronchial tubes in a considerable portion of the lungs; and as, in almost all cases of asthma, some shortness of breathing remains, in the intervals of the fits, we must admit, and, in fact, most physicians who have written on the subject have admitted, that some degree of spasm is permanent." 61.

The fact that diseases of the heart and great vessels, and that emphysema of the lungs are frequent causes of the "asthmatic dyspnoea," prevents, no doubt, in many cases, the necessity for resorting to the hypothesis of spasm. There still, however, says Dr. Budd, remain some cases, which at present we can only explain by supposing the dyspnoea to be nervous. It seems probable that the number of such cases will be still further diminished, and that many of those fits of asthma, which we are now forced to consider nervous, will be discovered to depend on some organic change which has as yet escaped our observation, perhaps on some morbid condition of the blood itself. If the asthma be really nervous, Dr. B. concludes that it depends on spasm or suspension of the normal action of the diaphragm and other muscles of inspiration.

V. ON A REMARKABLE EFFECT UPON THE HUMAN GUMS PRODUCED BY THE ABSORPTION OF LEAD. By HENRY BURTON, M.D., &c.

Dr. Burton has examined, since 1834, the mouths of patients admitted into his wards, who had been exposed to the action of lead in the course of their usual avocations; and of those also who had swallowed the acetate of lead medicinally. "The result," he adds, "of this investigation has proved highly interesting. It has led to the belief that a salivation in the ordinary sense of the word does not occur in one case out of thirty-six cases of lead colic, the number examined in my wards; nor in one case out of fourteen cases of pulmonary disease, which were treated by me with acetate of lead; but in the total number of fifty patients who were examined whilst under the influence of lead, a peculiar discolouration was observed on their gums, which I could not discern on the gums of several hundred patients, who were not under the influence of lead, and which I believe cannot

be produced by any other internal remedy." The sign, therefore, becomes diagnostic of the presence of lead, and may obviate in many cases the infliction of lead colic.

The following is a sufficiently accurate account of the appearances. The edges of the gums attached to the necks of two or more teeth of either jaw, were distinctly bordered by a narrow leaden-blue line, about the one-twentieth part of an inch in width, whilst the substance of the gum apparently retained its ordinary colour and condition, so far as could be determined by comparing the gums of these patients with those of other patients of the same class in the hospital: there was no invariable tumefaction, softening or tenderness about them; neither was there any peculiar factor in the breath, nor increased salivary discharge to be observed on any of the fifty patients; and on thirteen out of fourteen patients, who were treated in the hospital with acetate of lead, and carefully watched during its employment, the substance of the gums, the smell of the breath, as well as the quantity and colour of the saliva, preserved the same characters, after the appearance of the blue line, as they respectively possessed before the saturnine preparation was administered; but on the fourteenth patient, who died from hæmoptysis, the gums, which were, previously to the use of lead, tumid and soft, became contracted and firm, after the blue line had appeared.

In no one instance, did Dr. Burton observe any thing at all similar to the bleeding tumefied gum of scorbutus. Nor was such a state of gum as is induced by mercurial salivation ever observed by him.

The discolouration is a very constant occurrence; it precedes all other unequivocal symptoms produced by lead, and is not equally exposed to the imputation urged against most medical data, of being fugitive and deceptive. For the discolouration is very permanent; it has endured through months and until death, and having been once observed may be afterwards easily recognised. On a few patients only had it entirely disappeared before they quitted the hospital; on others it had only partially vanished. In many it continued with little or no change; and on a few patients who died after the medicinal use of lead had affected their gums, the discolouration appeared more distinct a few hours after death, and before putrefaction could have begun than during life. It cannot be confounded, when distinct, with the ordinary colour of the gums, during life; and after death any ambiguity which might have existed previously will be entirely removed by the strong contrast of colours disclosed on the gums of the dead body. The pathognomic value of the discolouration will bear a proportion to the regularity of its appearance under similar conditions; and in some cases, a little ambiguity may arise from the difficulty of discriminating between imperfectly defined colors; but this ambiguity will soon cease if the patient continues exposed to the action of fresh portions of lead; and in all cases the phenomenon will possess some importance if viewed in connexion with the ordinary symptoms of the presence of lead.

The sign in question, has enabled Dr. B. to detect the presence of lead in the system, when the patients themselves were not aware of it. Dr. Burton relates two rather interesting cases.

The *first* was that of a carpenter. He had never worked in lead, nor had he any suspicion of having been exposed to its influence; but he had experienced a severe illness about four years before his admission into the

hospital, which had been followed by a partial paralysis of the fingers of his left hand. In other respects his health was restored, and continued good until a few weeks before he was placed under Dr. B.'s care; he then began to feel languid, and to experience a sense of weight about the limbs; his appetite failed, and subsequently he suffered a pain in the stomach, which extended upwards over both breasts to the shoulders and down the arms; the bowels had been constipated for a week previous to his admission, and during this interval vomiting had several times occurred. His nights had been passed without sleep; his pulse was 96, soft and regular, his skin warm, his countenance pale. In addition to these symptoms tremors were noticed in both hands when the patient extended his arms, and the gums were very distinctly marked with a leaden-blue border line. The combination of symptoms in this case was such as indicates lead colic and paralysis of the wrists; but in what manner lead was introduced into the system could not be ascertained.

The *second* patient was a cordwainer, who had, until his admission, resided in the country. The features of this man were sallow; he was spare, entirely free from paralysis of the voluntary muscles, but he had experienced for several years, at intervals, repeated attacks of colic, by which he had been confined to his bed seventeen times. During these attacks he had endured violent pains in the abdomen, frequent vomiting, and obstinate constipation, sleepless nights and loss of appetite. The gums of this patient were rather turgid, although not more so than nine-tenths of the gums of those patients who resort to hospitals; they were also very well marked with the peculiar blue line, but no other evidence of the patient having been exposed to the action of lead could be obtained.

Dr. Burton believes, and it is very probable, that however ignorant they might be of the *mode*, these patients were labouring under the influence of lead. Our author, indeed, ventures to express a strong notion that the unobserved introduction of lead into the human body is continually taking place, to a much greater extent than is usually imagined, and that it has often caused an ambiguous assemblage of morbid symptoms: for although the influence of lead on the system is readily detected when the symptoms are severe and follow each other in the expected order of succession, yet when they are mild or do not follow each other in the regular and stated order of succession, if the mind of the physician is not awake to their cause, or the cause cannot be ascertained, then the symptoms appear ambiguous, and they may be misinterpreted without exposing the physician to the imputation of unpardonable ignorance, or of culpable oversight. But he contends that, in abdominal diseases simulating lead colic, as well as other forms of disease about which any ambiguity exists, an inspection of the gums will decide the question, whether the symptoms were produced by lead. Thus, cases often occur in hospital practice in which the functions of the brain and cerebral nerves are paralysed by lead, and in which coma, vertigo, headache, amaurosis, and sometimes deafness, are the most evident effects; in other instances the patients complain of articular pains resembling those of chronic rheumatism, periostitis, and secondary syphilis. In many of these cases an inspection of the gums will assist in making a correct diagnosis.

He thinks that articular pains, proceeding from the action of lead, have been treated sometimes as those of chronic rheumatism, at others as those

of secondary syphilis, often empirically. And he quotes a case from Andral—that of a painter, who never having experienced lead colic, suffered during four or five months severe pains in the membranes of the head, which had been at first regarded as rheumatism, and unsuccessfully treated by bleeding and vapour baths; but there being afterwards reason for believing the pains were produced by lead, the patient was treated for ordinary lead colic, and recovered.

“The next problem to be solved is, whether the phenomenon can be made available as a means of averting the infliction of lead colic in the treatment of disease with saturnine preparations. To give an incontestable solution of this problem would require a greater number of data than I have hitherto been able to collect; nevertheless, on referring to my ward-books of the last few years, there appear to have been about twenty-seven patients treated with acetate of lead and opium; and out of that number, there were twenty at least in whom no colic and no other material inconvenience was induced by the remedy, except constipation; in two or three cases the colic symptoms were very severe, but in these latter the hæmorrhage was profuse, and the dose only proportionately large. But with ordinary precautions, colic does not occur severely during the medicinal use of lead; and I have frequently persevered in the use of the salt, for some time after the blue line had appeared, without producing it, or only slightly.” 66.

The time required to produce the blue line varies in general with the amount of the dose, but not always; and, *cæteris paribus*, large doses affect the gums sooner than small. Mr. Moyle of Chacewater produced the discolouration in twenty-four hours, by giving four doses of gr. v. each, every six hours; and Dr. B. thinks it very probable, that in cases of poisoning, from “the irritant effects of large doses of the soluble salts of lead,” similar to those described by Dr. Christison in his very valuable “Treatise on Poisons,” the discolouration would be obvious on the gums in five hours after swallowing the salts; although the time required in several cases under Dr. Burton’s own care, was much longer, in which large medicinal doses of the acetate were given frequently in twenty-four hours.

Dr. B. suggests an examination of the gums in medico-legal investigations, and he also suggests to workmen the precautionary examination of them in their own persons.

VI. A CASE OF DISEASE IN THE POSTERIOR COLUMNS OF THE SPINAL CORD. By EDWARD STANLEY, Esq. F.R.S. &c. &c.

Mr. Stanley is so well known as an accurate anatomist and pathologist, that any fact which he relates will carry with it the greatest possible weight. The case which forms the subject of his present paper, derives much of its value from the eminent character of its author.

Case.—Joseph Cosden, aged 44, was admitted into St. Bartholomew’s Hospital on account of the loss of the power of motion in his lower limbs, of which he gave the following history: that it had not been preceded by any external injury, and had commenced about three years previously; that at first, and for some time, the impairment of motion was slight, but had afterwards progressively increased to the present period. In the investiga-

tion of the case on its admission, the patient was lifted into a chair; and when thus sitting, he did succeed, by a great effort, in raising his legs from the ground; but afterwards the inability of motion became complete through each lower limb in its entire extent. There was no discoverable impairment of sensation in any part of either limb: on scratching, pricking and pinching the skin, nowhere was any defect of feeling acknowledged by the patient. In the upper limbs there existed no defect either of motion or sensation. The general health was feeble. In the idea that the impairment of the lower limbs might in some degree depend on congestion in the vessels of the spinal cord, a few ounces of blood were taken, by cupping, from the loins; which reduced the pulse, and occasioned the feeling of extreme debility, but with no improvement in the limbs. Mercury was also administered to the extent of inducing moderate salivation, but with no benefit. The further symptoms were simply those of gradually increasing exhaustion of the vital powers, with inability to expel the urine or retain the fæces. Quinine, ammonia, wine, with the most nutritive diet, produced a slight and transient impression on the general health, but none on the condition of the lower limbs. At length he sank, about three months from the period of his admission into the hospital.

The case was supposed to be one of disease of the anterior columns of the spinal cord. It turned out to be the contrary.

Dissection.—The cord was found to be the only seat of disease, but that this disease was strictly limited to its posterior half or columns. About an ounce of serous fluid was found in the theca of the cord; in other respects the membranes were healthy. The substance of the cord through its posterior half or columns, and in its entire length, from the pons to its lower end, had undergone the following changes of colour and consistence: it was of a dark brown colour, extremely soft and tenacious. The substance of the cord, through its anterior half and entire length, exhibited its natural whiteness and firm consistence; and on making a longitudinal section of the cord through its centre, and in the antero-posterior direction, the boundary line between the healthy and diseased nervous matter was seen to be most exact: it was a straight and uninterrupted line from the pons to the lower end of the cord. The roots of the spinal nerves were unaltered. The brain was healthy. The mucous membrane of the bladder exhibited the characters of recent inflammation. The kidneys and other viscera were sound.

Mr. Stanley observes that the examination of the body, in this instance, was witnessed by many competent observers—that it proves the uncertainty of our knowledge of the functions of the anterior and posterior columns of the cord—and, finally, that we have no means of explaining the continuance of sensation and motion in the upper limbs, while the cervical portion of the cord exhibited such alteration of structure. If well-authenticated cases are on record, in which destruction of a portion of the cord throughout its entire thickness has not led to the abolition of sensation or motion below the seat of disease, that does not, unfortunately, assist in elucidating, however it may support such cases as the present.

VII. ON THE ARRANGEMENT OF THE INTERMEDIATE VESSELS ON SURFACES SECRETING PUS; WITH A NOTE REGARDING THE VASCULARITY OF ARTICULAR CARTILAGE. By ROBERT LISTON, &c. &c. &c.

Mr. Liston is well known by his friends to have devoted much time to the microscope, and to be very expert in the use of it. He is not likely to play with it, nor to allow what it discloses to be lost to surgery. We must all feel indebted to him for the following observations on a point of much importance—the mode in which granulations are formed and receive their vascular supply.

Mr. Liston remarks, that the granular deposit of lymph on surfaces exposed and unprotected by integument, is speedily supplied by blood-vessels, nerves, and absorbents, admits of no doubt, and is easily demonstrated by the examination and treatment of any healing ulcer. Mr. Liston describes the arrangement of the intermediate vessels on granulations, as they appear in the cysts of abscesses, and on open sores.

“ It will appear, on careful examination, that the abscess is coated on the interior and free surface by a layer of lymph of greater or less thickness, as may be; generally, about one-tenth of an inch. This layer is first of all deposited in a fluid state, and consists of the liquor sanguinis, or fibrine in a state of solution, as separated from the blood. It is exuded in the form of minute transparent drops, which being spontaneously coagulable, gradually become milky and consistent. The granules appear first of all to become coagulated on the surface, and the interior of the drop, as it were, remains for a time fluid and transparent. A sort of minutely granular or tuberculated surface externally, cellular internally, is thus formed.

This layer, with which the purulent deposit is in immediate contact, by and by becomes more consistent, and acquires a yellowish white colour. It lies upon a highly vascular membrane, to which it adheres more or less intimately, according to the duration of the process. The vessels in this tissue are curiously interlaced, anastomosing freely with each other, so as to form a very fine and delicate net-work.

There seems to be in this lymph, from the first, an impulse, as it were, towards organization; and after a very short time it becomes permeated by minute blood-vessels, which admit our fine injections. The diameter of the vessels was most frequently $\frac{1}{100}$ th of an inch. The extreme sizes being $\frac{1}{100}$ th and $\frac{1}{100}$ rd; and the following intermediate measurements were obtained, viz., $\frac{1}{100}$ th, $\frac{1}{100}$ th, $\frac{1}{100}$ th, and $\frac{1}{100}$ th, of an inch.

These capillaries project into the new and adventitious membrane from that underneath it; often, in straight parallel lines. Their arrangement in the granules on the free surface is, however, distinctly looped and tortuous; and these loops communicate with each other.” 87.

Which, asks Mr. Liston, is the “pyogenic membrane?” The deposit of lymph in the greater number of situations and circumstances precedes the secretion of pus; and when this layer becomes organized, and the vessels assume the curiously convoluted and looped arrangement shown above, there can be no doubt but that the office of secretion is performed there. The resemblance to the looping of vessels in healthy secreting surfaces, the skin, the mucous membranes, &c., must be obvious.

Mr. Liston further inquires—how these looped vessels are produced. It is not easy to imagine that they are mere elongations of the original capil-

laries of the part, which have been dilated and relaxed. The deposit, as already remarked, seems to have an internal impulse towards organization. Mr. Hunter suspected that new parts had the power of making vessels and red blood independently of the original circulation—a view supported by observations on cold-blooded animals.

In solutions of continuity, proceeds Mr. Liston, reparation takes place, as has been well known since the time of John Hunter, by the deposit of plastic matter; and this layer, as that distinguished pathologist has shown, is speedily supplied by blood-vessels. On a careful examination of a portion of injected ulcer, more particularly in a profile view of it, it will be found that the secreting vessels are arranged in a precisely similar manner to those in granular deposits of lymph. This might have been expected, and so might the slight difference in appearance. These vessels on exposed surfaces are disposed in exactly the same fashion; but they are also enormously and irregularly dilated—varicose in fact. This arises, no doubt, from want of support, or from unfavourable position. And in neglected ulcers the vessels of the granulations often burst. The dark colour of the sore, the bloody and gleety discharge, very soon show to the surgeon of experience in hospital practice whether or not the patient obeys the injunction to keep the limb elevated. Soon also, does he discover whether or not, any trick is attempted by ligature or otherwise, to interrupt the progress of cure.

The purulent secretion is probably transuded through the coats of the looped, tortuous, and dilated capillaries.

As regards cicatrix, it may be remarked, that the vessels speedily contract. They are arranged in a reticular fashion, but, after a time, the net-work is not nearly so full as in the surrounding skin.

Occasionally, an approach to the papillary arrangement seems to be attempted, as seen in good sections after successful injections.

Mr. Liston offers a few practical deductions.

“ And first of all, the mischievous effects of squeezing together the sides of suppurating cavities may be noticed.

By this proceeding, adopted through a blind and thoughtless observance of the bad practice of others, the lymphatic coating is separated from its vascular base; the circulation of the part is unnecessarily excited; bloody and often putrid secretion is poured out; and the general health in consequence disturbed. If a sufficient opening is made in a dependent position, the accumulated secretion is rapidly enough discharged; and the walls of the cavity come together and coalesce through the natural elasticity and action of the parts.

As regards ulcers, the paramount advantage of an elevated position of the affected part must be sufficiently obvious. The rapid disappearance of congestive swelling, and of inflammation by an observance of this practice alone, in many cases, must make apparent the good effects of favouring the return of blood.

The larger veins, previously varicose and over distended, become collapsed, and almost disappear.

The same effect upon the varicose capillaries in the solution of continuity necessarily follows; the colour of the sore is speedily altered for the better, the painful feelings abate, and the nature of the discharge is ameliorated. Until this is the case, and as long as over-action, to any degree exists, soothing and relaxing applications are advantageous; exudation of lymph and plentiful secretion of pus are thus encouraged.

These are followed by mild astringents and stimulants, by which the dilated and weakened condition of the coats of the vessels may be supposed to be amended.

The discharge is thus moderated, and the granulations prevented in a manner, from becoming exuberant. The beneficial effects of uniform support can also be well understood." 92.

Mr. Liston concludes by alluding to the question whether cartilage is extravascular or not.

He has been enabled to demonstrate the existence of vessels, most undeniably, in the articular cartilage of several diseased joints, and presents a sketch of one portion. In this the vessels run straight, in parallel lines, from the injected membrane of the bone. Many of these are joined at their further extremity in the cartilage, thus forming long loops. The possibility of cartilage being acted upon, nourished, absorbed, and repaired, by its own vessels, must thus be admitted. In fact, in many of the specimens in Mr. Liston's possession, lymph is deposited on the surface of ulcerated cartilage, and injected vessels can be traced passing into this lymph. Mr. Liston concludes:—

"Under circumstances favourable for it, solutions of continuity in cartilage appear to be repaired, without however much reproduction of the tissue.

It would appear that ulcerative absorption of cartilage occurs in three forms :

First. In consequence of disease of synovial membrane, which becomes much swollen, and to which processes of adventitious tissue are superadded, the cartilage is removed where it is encroached and pressed upon. The prolongations of the membrane, in a highly injected state, as well described by Mr. Key, fit most accurately to every crevice of the breach of surface in the cartilage. At first there is no union of the surfaces, the membrane being merely accurately adapted and closely applied to the ulcerated surface. Frequently, however, as the disease advances, adhesions form betwixt the vessels of the synovial membrane, and those proceeding from the medullary web. An adhesion of considerable length is thus often formed betwixt the synovial surface, and the articulating end of the bone.

Second. Absorption of cartilage seems often to arise from swelling and intense vascularity of the tissue connecting it to the bone. This cellular tissue is scarcely demonstrable in the healthy condition of parts, any more than is the vascularity of the articular cartilage ; but it becomes most remarkably developed in a state of disease. The cartilage is in consequence loosened and thinned ; at first, apparently, by interstitial absorption. Then it becomes perforated, and an ulcer, of greater or less extent, with thin undermined edges, is presented. In consequence of disease of the interposed tissue, the cartilage is sometimes thinned, and ultimately detached in flakes ; forming, in fact, sequestra of the tissue.

Third. Lastly, cartilage still firmly adherent to the subjacent bone, is permeated by vessels communicating with those of the bone, and ulceration proceeds from the free surface. The cartilage, very often previously swollen and softened, is gradually and irregularly thinned : the bone is exposed, and is finally acted upon also, by ulcerative absorption. The ulcerated surface is generally coated by a layer of organized lymph. More than one form of the ulcerative process may sometimes be observed in the same articulation." 95.

A valuable communication.

VIII. REMARKS ON THE DIAGNOSIS OF FOREIGN BODIES IN THE LARYNX.
By CÆSAR H. HAWKINS, Esq. Surgeon to St. George's Hospital.

Mr. Hawkins' observations are always of so practical a bearing as to render them equally interesting and instructive. The following quite support that character.

Mr. Hawkins commences by relating a case.

Nov. 18, he was asked to see Miss S. aged 12 years, who had been suddenly seized, while taking some soup about eight hours before, with violent vomiting, and suffocating cough, which lasted for a short time, and then left her with a noise in breathing, which was somewhat difficult, and with a sense of pain beneath the cricoid cartilage. She believed she had felt a piece of bone in her mouth at the time, and that she had swallowed it. About two hours after the accident an emetic had been administered by Mr. Davis, the assistant of a medical man in the neighbourhood, which had brought up some solid meat, and seemed to have a little relieved her.

When Mr. Hawkins saw her she was breathing with a croupy noise at each inspiration, but without much labour, and she complained of some pain and tenderness in the larynx, referred more particularly to the cricoid cartilage. She could swallow without any difficulty, and on examination with a pair of curved forceps, it was evident that there was nothing in the œsophagus at the seat of the pain. The finger, passed behind the epiglottis, felt nothing like a foreign body in that situation; her voice was natural, and there was no cough, nor had there been any since the accident, to which attention would otherwise have been drawn. The tongue was a little dirty, she was flushed and the eyes suffused, and the pulse quickened, and there was some anxiety of expression. She had been in good health before the accident, except that she had a slight cold the day before, with a sense of tightness across the epigastrium. The lungs appeared healthy, and there was no other apparent cause for the croupy noise and difficulty of respiration, except a good deal of fullness and redness of the tonsils and palate and fauces, which might extend to the larynx, but which might also have been the consequence of the vomiting occasioned by the accident and by the emetic.

Mr. H. had little doubt that a piece of bone had "gone the wrong way," but under the circumstances he thought it advisable to leave her till morning, administering some calomel and antimony, and applying a sinapism to the throat.

Next morning, there was neither distress in breathing, nor feverishness, but the noise in respiration was as constant as before, and was equally audible in expiration and in inspiration, and a little pain and tenderness remained below the cricoid cartilage. Both Mr. Hawkins, however, and Mr. Babington, who saw the case with him, concurred on the propriety of not delaying the operation.

"I therefore made the usual opening into the trachea, just below the thyroid gland, which was unattended with any hæmorrhage, and removed a small piece of two rings of the trachea, in the centre of the incision, which was made through three others also, and endeavoured to get the piece of bone thrown out by making the patient cough repeatedly, but without avail; feeling the foreign substance

with the probe just above the opening, I then introduced a pair of forceps and extracted it, not without some little violence, from the manner in which it was fixed. It was a portion, as it seemed, of the spine, shewing the curved surface of the canal of a vertebra in a neck of mutton, nearly half an inch long, and a third of an inch wide, the outer surface being very rough and irregular, so as to account for its fixed position below the glottis." 100.

The breathing immediately became noiseless, and neither cough nor other unfavourable symptoms succeeded.

Mr. Hawkins makes some observations on the case, which, we think, should receive the serious attention of surgeons.

1. In by far the greater number of instances, a foreign body which has entered the windpipe continues to be moveable within the trachea. Mr. Hawkins quotes Mr. Ryland's account of the symptoms. "From laryngitis or croup," says Mr. R., "this accident may be distinguished by the absence of fever at first; by the very sudden manner in which the symptoms came on; by the *intermission* in the difficulty of breathing, which sometimes continues for an hour or two; by the *noise* occasionally heard when the foreign body is impelled against the vocal cords; by the *excessive violence* of the *cough* after this occurrence, and most *particularly* by the chief difficulty of breathing being during the time that the *expiratory* process is going on; whilst in laryngitis the chief difficulty is in the act of inspiration."

Mr. Hawkins observes on this:—

"No doubt this account is generally correct, when the intruding substance is *within the trachea*, even when it has been surrounded by tenacious mucus, causing it, at the time of operation, to be adherent to the membrane of the tube, so as not to be immediately expelled, as in a case of Sir Charles Bell's at the Middlesex Hospital; or when it has adhered by some roughness, as in a case of a piece of the jaw of a mackerel, extracted by Pelletan. Yet it will be observed, that in the preceding case scarcely one of these symptoms corresponded with what really took place; the attack was indeed sudden, so as by itself to render the case scarcely doubtful; but there *was* a good deal of feverish excitement when I first saw the patient; there was *no intermission* whatever in the difficulty of breathing, and for the same reason *no noise* could be heard by the striking of the substance against the vocal cords; there was absolutely *no cough* whatever after the first few seconds; and instead of the noise in breathing being chiefly in *inspiration*, it was heard, on the day of the accident, only in *expiration*, and on the following day it was equally audible in *both portions* of the respiratory process." 102.

2. When a foreign body is moveable within the trachea, it has been frequently found to pass into the right bronchus; and some interesting cases of this kind have been published by Mr. Key, Dr. Houston, Mr. Liston, and others, who have shown the absence of the symptoms before enumerated, if it remains almost entirely in this situation, together with the new stethoscopic signs of its presence in the bronchus, viz., the freedom of the larynx from disease, and the occasional or permanent cessation of respiration in the lung of the affected side.

3. If the foreign body is actually fixed within the vocal cords, instant and sudden death has usually been the immediate result; whether it has been impacted in this situation at once, or has first moved freely within the trachea, and has been subsequently fixed in the glottis during a fit of coughing.

4. If it is fixed within the larynx in some other situation, as in the ventricles, without causing immediately fatal effects, a foreign body is yet generally said to occasion much distress and danger. 'It will produce,' it is said by Dr. Stokes, 'more or less violent and incessant attacks of cough and dyspnoea, in which the lungs are found, on auscultation, to be sound, and the larynx to be the seat of

the constriction; the permanency of which, together with the history, will point out the nature of the case.' 'It may happen,' says Mr. Porter, 'that if the body be round and polished and small, it shall occasion no symptom of distress, except *the cough*, and the *difficulty of breathing*, and the patient may exist for a long time without the occurrence of those morbid actions which render the accident certainly fatal.'

5. "But," says Mr. Hawkins, "that a foreign body should be fixed in the larynx *below* the glottis, and that the symptoms should be much modified by this position, does not appear to have been noticed by writers upon this subject; except that the cough, in cases of foreign bodies within the air-tube, arising from the direct irritation of the glottis, the absence of this symptom, it has been remarked, may be considered as a presumptive proof that the foreign body is fixed somewhere in the tube. Even this remark, however, requires some correction, since it must be recollected that the fatal effects upon the *lungs* may occasion cough, although without so much distress, as in the cough produced by direct irritation of the glottis. The part of the larynx immediately below the glottis is not enumerated by any writer, as one of the situations in which a fixed foreign body is to be looked for, although some distinctions have been attempted to be drawn of the symptoms likely to be occasioned by the different situations I have before alluded to, viz., the glottis itself, or one of the ventricles of the larynx, or the tracheal tube, or one of the bronchi." 105.

Mr. Hawkins has only been enabled to find two cases similar, though not precisely like his own. These he refers to, and concludes by remarking:—"It appears then that in three cases in which a foreign body was fixed in the situation of the cricoid cartilage below the glottis, the severe paroxysms of coughing, which are invariably looked for as evidence of the presence of a foreign body, (but which really belong essentially to its presence in other parts of the tube,) were entirely absent in two, and were mild in the third, so as to lead the surgeon to believe they could not arise from the entrance of the pebble, as the child asserted, and were afterwards entirely absent in the last month of her life;—that even the voice was unaffected in two of the cases, although hoarse in the third case;—but that in all three cases there was soreness and uneasiness in the part where the foreign body was fixed, a noise in inspiration or expiration, or in both, from the mechanical effect of the intruding substance, (mistaken indeed for croup in one of them,) and in all, the *patient asserted* that something had been *swallowed*.

Where such circumstances as these are present to guide the surgeon, I conceive he is imperatively called upon to operate without much delay, since out of the only three cases, with which I am acquainted, in which the foreign body has been thus lodged and fixed near the glottis, two were fatal; one within sixty hours, by the immediate effects upon the lungs, though without any other symptom than in my own case; the other at a later period, by the slower influence of inflammation; while in my patient a more fortunate result was met with, in consequence, it cannot be doubted, of the removal of the foreign body, at an early period, by an operation, which is seldom very difficult, except in very young children, and perhaps is never attended with any important risk."

IX. HISTORY OF A CASE IN WHICH TRACHEOTOMY WAS PERFORMED; WITH OBSERVATIONS. By BENJAMIN TRAVERS, JUN. ESQ.

We are glad to perceive that Mr. Travers, jun. is following in the steps

of his able father. Similar zeal in the prosecution of surgical science will lead, we cannot doubt, to similar eminence, a prize of no mean value to the most ambitious man.

Case.—A robust girl, aged six years, the daughter of a farmer residing near Eye in Suffolk, whilst sitting upon some straw in the yard, was suddenly thrown backwards by a pig concealed beneath the heap. She was eating cherries at the moment, and was immediately seized with a violent fit of choking, and every symptom of impending suffocation. This condition lasted an hour, and then she fell asleep. The accident occurred about four o'clock in the afternoon of Friday, July 19th. She was seen an hour afterwards by Mr. Vincent, surgeon, of Rickinghall. Being awakened by slight cough, some emetic and purgative medicine was given, but no stone was detected in the matters rejected from the stomach and bowels.

She slept well during the ensuing night, but on the 20th, had some spasmodic pain in the chest. At seven a.m. of the 21st, there being dyspnoea and inflammatory symptoms, some blood was drawn and calomel and opium were given.

At four p. m. of the 22d, she had violent convulsive seizure with cough, small quick pulse, a livid surface, suffused eye, and every sign of threatened suffocation. The spasm subsided in two hours, when she was tranquil till the 23d, when she had another fit. Cough frequent and sonorous. On the 25th, there was another paroxysm after which there was no disorder except occasional cough. The child remained well till the 1st of August, when the spasmodic attack returned with great violence, lasting two hours. The seizure now recurred daily, varying as to degree and duration.

Mr. Travers first visited the child in company with Mr. Vincent on the evening of Wednesday the 7th instant. She had just recovered from a severe fit of cough, and was sleeping uneasily. When roused, her breathing was laboured and stridulous, pulse small and hurried, countenance anxious and suffused; there were frequent paroxysms of croupy cough, attended by great restlessness, and that peculiar grasping of the throat before noticed. The temperature was sustained. The attacks were now more frequent, and the consequent exhaustion more marked.

Mr. Travers lost no time in performing the operation. With a little difficulty, he succeeded in dividing vertically three rings of the trachea with the connecting membrane midway between the isthmus of the thyroid gland and the top of the sternum. By inclining the head forward, an oval aperture was produced, of sufficient extent to have permitted the escape of the stone, had it been free to move in the canal. The breathing became tranquil, and the cough ceased. Mr. Travers determined to ascertain whether the larynx was obstructed. He pushed a silver catheter fairly through the glottis, which he ascertained by passing his fore-finger over the base of the tongue, so as to touch the apex of the instrument in that situation.

The gums were made sore—towards the close of September the wound healed—in the beginning of October the child coughed incessantly, and had night sweats, with loss of strength and appetite. Mr. Vincent still suspected the presence of a stone, and on October 23d, his suspicion was verified by the ejection of a stone, together with a table-spoonful of pus, during

a violent paroxysm of cough. From this time the cough never returned, and the general health was soon re-established.

Mr. Travers makes some very pertinent and useful observations on the case, but having already, in our notice of the preceding paper, devoted much space to the subject, we are constrained to pass them over with this simple commendation.

X. MEMOIRS ON SOME PRINCIPLES OF THE PATHOLOGY OF THE NERVOUS SYSTEM. By MARSHALL HALL, M.D. &c. &c.

Dr. Marshall Hall has done and is doing good service to physiology. There are few persons, we think, possessed of a more untiring zeal in the advancement of science than himself. To say less would be injustice.

This SECOND MEMOIR is, on:—

THE MORBID REFLEX AND RETROGRADE ACTIONS OF THE SPINAL MARROW.

He first treats of—

The Reflex Actions.—Dr. Hall begins by observing that Haller, Bichat, and Müller distinctly state that the *vis nervosa* acts in *one* direction only, viz. that *from* trunk *to* branch, or *from* the nervous centres *towards* those parts of the muscular system placed in relation with them. But Dr. Hall observes, that it appeared to him that, when he had established that the reflex actions did not depend upon sensation and volition, but upon some other principle of the animal economy, the only known principle which remained, and which could be the probable agent in these actions, was the *vis nervosa*. He resolved, therefore, to institute a new series of experiments in order to determine the question, whether the *vis nervosa* were susceptible of other and unsuspected modes of action. These experiments consist in denuding and stimulating the lateral nerves in the decapitated turtle. It results from them, in reference to the *vis nervosa*:—

1. That it acts in *direct* lines *along* the spinal marrow, and *from* the trunks *to* the branches of the nerves, and *to* the muscles they supply,—according to the law laid down by Haller, Bichat, and Professor Müller.

2. That it acts in *reflex* directions *to* and *from* the spinal marrow; that is, *from* peripheral, cutaneous, and mucous surfaces, *through* the spinal marrow, and *to* the co-ordinated muscles, according to a newly-discovered law; and, as will be seen hereafter,

3. That it acts in a *retrograde* direction along the spinal marrow.

Now, under what circumstances, are reflex actions most apparent in the human frame? Dr. Hall can state that, in order that they may be very apparent, it is essential—

1. That the interference of *volition* should be removed;
2. That the *vis nervosa* and the *vis muscularis* should be unimpaired, not to say augmented, and
3. That the *reflex nervous arcs* should be uninterrupted.

The interference of volition with some of the phenomena of the reflex function is obvious from some of the phenomena of sleep and of comatose

and paralytic affections. Gently touch the palm of the hand of a sleeping child, it grasps the finger—do the same thing when the child wakes, it does not. Again, in cerebral paralysis, the reflex actions are most observed when the paralysis is most complete.

“The first effect of a violent experiment or accident seems to be to suspend the *vis nervosa*, the *vis muscularis*, or both. It is accordingly observed that *immediately* after the division of the spinal marrow, in an experiment, or *immediately* after injury sustained by the same organ in the human subject, by a fall or other accident, the reflex actions subsequently developed and manifested most clearly, are not observed.

The nervous and muscular powers are gradually restored from this suspension as the effect of shock, and, at a still more remote period, even acquire an anomalous degree of intensity. The phenomena dependent on them are augmented proportionately. The same remark is still more true in regard to cases in which the *vis nervosa* is morbidly augmented by disease, as in tetanus, hydrophobia, certain affections of the spinal marrow, in the effects of strychnine, &c. In these latter cases the slightest cause of excitement is reflected with terrific energy upon the appropriate parts of the muscular system.

3. Lastly, it is essential that the reflex nervous arcs should be entire. It has been observed that in some cases of paraplegia the reflex actions are present, in others absent. A slight knowledge of the anatomy of the spinal column is sufficient to explain this apparent discrepancy. If the disease be seated within the *cervical* or *dorsal* vertebræ, the spinal marrow in this part is affected, but a portion *below* may remain free from the influence of the disease; the reflex arc which involves this portion may, therefore, be entire, and the reflex actions will be observed. If, on the contrary, the disease be situated within the *lumbar* vertebræ, the *cauda equina* is affected, the centre of every reflex arc is excluded, and all the reflex actions will be absent.” 126.

Dr. Hall gives a table of the nervous arcs through which reflex actions take place—a table which we insert.

ANATOMY OF THE TRUE SPINAL SYSTEM.

- | | | |
|---|---|--|
| <p>I. The Incident Motor Branches.</p> <ol style="list-style-type: none"> 1. The Trifacial arising from— <ol style="list-style-type: none"> 1. The Eye-lashes. 2. The <i>Alæ Nasi</i>. 3. The Nostrils. 4. The Fauces. 5. The Face. 2. The Pneumogastric, from— <ol style="list-style-type: none"> 1. The Pharynx. 2. The Larynx. 3. The Bronchia. 4. The Cardia, — Kidney, and Liver. 3. The Posterior Spinal, arising from— <ol style="list-style-type: none"> 1. The General Surface. 2. The Glans Penis or Clitoridis. 3. The Anus. 4. The Cervix Vesicæ. 5. The Cervix Uteri. 6. The Extremities. | <p>II. The True Medulla Oblongata and Medulla Spinalis, the Centre of the System.</p> | <p>III. The Reflex, Motor Branches.</p> <ol style="list-style-type: none"> 1. The Trochlearis } <i>Oculi</i>. 2. The Abducens } 3. The minor portion of the Fifth. 4. The Facial, distributed to <ol style="list-style-type: none"> 1. The Orbicularis. 2. The Levator <i>Alæ Nasi</i>. 5. The Pneumogastric or its Accessory <ol style="list-style-type: none"> 1. The Pharyngeal. 2. The Œsophageal and Cardiac. 3. The Laryngeal. 4. The Bronchial, &c. 6. The Myo-glossal. 7. The Spinal, distributed to the <ol style="list-style-type: none"> 1. Diaphragm, and to 2. The Intercostal and } <i>Muscles</i>. 3. The Abdominal } 8. The Sacral, distributed to <ol style="list-style-type: none"> 1. The Sphincters. 2. The Expulsors, the Ejaculators, the Fallopian Tubes, Uterus, &c. 3. The Extremities. |
|---|---|--|

Dr. Hall next proceeds to make some observations on the diseases in which the reflex phenomena are observed, and to give a series of cases in illustration.

1. *Diseases of the Head.*—In the coma of apoplexy, of epilepsy, and of hydrocephalus, we observe, according to the *degree* of the affection, the diminution of the cerebral, and of the cerebral and true spinal functions. The test is supplied by the eyelids. In the slighter forms of coma, the eyelids are frequently but partially closed, yet they close perfectly on touching the eye-lashes; in the severer forms of this affection, not only the cerebrum, but the medulla oblongata, has its powers impaired, and the eyelids do not close, although touched.

2. *Of Hemiplegia.*—The reflex actions are not less observed in cases of hemiplegia than in cases of paraplegia; but as they are, in general, more obvious the more complete the paralysis, and as the paralysis of hemiplegia is, in general, less complete than that of paraplegia, they have been less observed in the former affections.

Dr. Hall gives several instances of this. One only need be cited.

Case.—"Mr. F., aged about fifty-five, was seized, three months ago, with apoplectic symptoms, which left pretty complete hemiplegia. At first there was a little stertor and a little dysphagia; but these symptoms ceased with the apoplectic state, the former at once, the latter a little more tardily. There was also slight enuresis for several days. On tickling the sole of the foot, or pinching the skin, or pulling a hair of the leg, and on applying a spoon just taken out of hot or cold water, there were distinct sudden movements of the leg. The same thing occurred in regard to the arm, but in a less marked degree. On first applying galvanism, the paralytic arm was least affected: the effect I suppose, of the shock of the disease; afterwards the paralytic arm was most moved, as in other similar cases. On the same principle, the effect of emotion, as laughter, was at the first more observed on the healthy than on the paralytic side of the face; more remotely, the equilibrium of the countenance, under the influence of laughter, was restored, or nearly so. At this time, the arm, and especially the hand, are paralysed to voluntary motion, but readily agitated by emotion, and sudden or energetic respiratory efforts, and constantly contracted as by a spring, the arm towards the trunk of the body, the fingers towards the palm of the hand; and, lastly, more agitated by the influence of galvanism than the unaffected limb. The voluntary power of the arm is much less restored than that of the leg, in which the phenomena just enumerated are, comparatively, absent." 137.

3. *Of Paraplegia.*—Dr. Hall details also many cases of the existence of the reflex actions in paraplegia. One will be a sample.

Case.—A girl, about 15 years of age, who was a patient of Mr. Crosse, at the Norfolk and Norwich Hospital, a few years since, was affected with angular curvature of the spine, producing insensibility and paralysis of the lower extremities. On tickling the *soles of her feet*, which as an experiment was often done, the legs were immediately slightly retracted, although the patient said she felt nothing; it was further remarked that on touching the *other parts of the feet or the legs*, in the same manner, no effect was produced.

4. *Tetanus ; Hydrophobia ; Effects of Strychnine.*—Dr. Hall observes that—" as in cerebral paralysis we have augmented irritability of the muscular fibre, or of the *vis insita*, in tetanus and hydrophobia we have the *vis nervosa* morbidly augmented, but in an infinitely greater degree.

The slightest external stimulus is sufficient to excite reflex actions in their most terrific forms.

What is remarkable is, that it is precisely the functions of the orifices and sphincters, of the ingestors and egestors, which are most affected in these formidable diseases ; and, most of all, the larynx, the pharynx, the organs of respiration, and the rectum.

The remarks which have been made relative to the condition of the reflex function in tetanus and hydrophobia, apply equally to that artificial tetanus induced by strychnine. In a report of La Charité, of Berlin, drawn up by Dr. Köhler, it is observed that, " in some individuals, the sensibility to external impressions, under the influence of strychnine, was so great, that they broke out into an almost uncontrollable fit of laughter on being touched with the finger."

5. *Undue Excitability.*—Instead of paraplegia, and the other forms of paralysis, arising from disease of the spinal marrow, we have occasionally undue excitability. Dr. Hall remarks that it is still a question how far the spinal marrow is primarily or organically affected in these cases, which he thinks quite distinct from those of common paraplegia.

Case.—In one case there were movements of the fingers somewhat like those seen in chorea, whilst the muscles of the legs were spasmodically contracted ; the patient was as incapacitated for muscular exertion as in paraplegia. The skin was so susceptible to impressions in certain parts of the surface, that the patient was affected with a sort of general emprosthotonic spasm, with a slight sob whenever the bedclothes, for instance, were drawn over his chest, and still more especially when the penis was accidentally touched in a similar manner. Similar effects were observed on applying the pure potassa to establish an issue along the spine. The legs were drawn upwards whenever the sole of the foot first touched the cold floor on rising in the morning.

6. *Peculiar Dysphagia.*—" From an undue excito-motory action, the pharynx seizes some solid portion of what is attempted to be swallowed, and this is afterwards returned by a peculiar effort, for which I know of no designation but that of a forcible hawking. A pill, though taken with a large draught of water, is arrested at the upper part of the pharynx. A little of the core of apple, or of the gristle of meat, is seized and retained in the same manner, the rest being duly swallowed. Sometimes large portions of food are thus retained. When the pharynx is thus occupied by a portion of food, it is necessary to remove it either by swallowing some fluid, or by the effort just described. It may not be without interest to add, that I am myself affected with this singular kind of dysphagia."

7. *Morbid Action of the Rectum, and Bladder, and of the Sphincters.*—There is, says Dr. Hall, a peculiar affection of the rectum and bladder in

some nervous affections, of which the following experiment affords both the type and illustration : if, in a turtle, after the removal of the tail and the posterior extremities, with the rectum, and, of course, with a portion of the spinal marrow, water be forced into the intestine by means of Read's syringe, both the cloaca and the bladder are fully distended before any part of the fluid escapes through the sphincter ; which it then does only on the use of much force, and *by jerks*. If, when the cloaca is distended, the integuments over it are stimulated, the water is propelled to a considerable distance.

When the rectum or bladder is distended, the patient feels a sudden call, and the action of the expulsors is so energetic, or the power of the sphincters is so diminished, that unless the call can be promptly obeyed the fæces or urine escape.

In tenesmus and stranguary, the sphincter of the rectum and of the bladder is excited to undue contraction respectively. A ligature applied to hæmorrhoids not uncommonly induces spasmodic action of the cervix vesicæ and retention of urine. In one case, calculus of the bulb of the urethra induced spasmodic stricture of the sphincter ani. All examples of morbid reflex action.

8. *Localization of Action of certain Remedies.*—Strychnine acts upon the glottis, cantharides on the neck of the bladder, aloes on the rectum, the secale cornutum on the uterus,—all organs specially under the influence of the excito-motory power and reflex function of the spinal marrow.

9. *Excitants of the Reflex Action.*—On the expulsion of the fœtus, and by the contact of the atmospheric air with the minute distributions of the incident nerves of the excito-motory system, that the functions of ingestion and egestion first commence.

It is, doubtless, from the impression of the atmospheric air on the trifacial and spinal nerves, distributed upon the surface of the face and body, that the first inspiration is excited.

The influence of cold water dashed on the face, and the influence of the diffused contact of the cold bath, in exciting sudden sobbing acts of inspiration, are well known.

The same contact of cold air which excites the first inspiration, also excites the first acts of expulsion of the fæces and urine. This effect is also seen in the late periods of existence. The cold bath induces the same effect. The uterus is well known to be very susceptible of the influence of cold too—the catamenia being checked, or uterine contraction excited by it. It is interesting, says Dr. Hall, to observe the influence of the same cause in disease. None are more remarkable instances of this than the phenomena observed in the coma of epilepsy and apoplexy. The medulla oblongata being compressed, together with the other contents of the cranium, the influence of dashing cold water on the face may be absolutely null : on taking off that pressure by blood-letting, the susceptibility to the influence is again restored : it becomes a measure, even, of the diminished compression.

There are other influences of cold, which must not be passed over unnoticed. Free exposure of the face to the cold breeze is the most effectual remedy in sickness, and affords manifest relief in asthma.

As to other excitants of the reflex functions, we need only call to mind

the simplest facts. The nipple or the finger, introduced between the lips of the new-born, or even the anencephalous, fœtus, immediately excites the act of sucking: the mere introduction of the enema pipe into the rectum of an infant, equally excites the action of the rectum. The irritation of a few grains of common salt, applied to the border of the sphincter ani, will induce the premature expulsion of an egg in a common fowl.*

Food is the natural excitor of the pharynx, œsophagus, and cardia—the fœces and urine of the expulsors about the rectum and of the bladder.

Some internal textures are, however, capable of transmitting the influence of excitants. I have seen the limbs of the decapitated turtle moved energetically on dividing internal tissues; and I have known spasmodic affections induced by disease of similar internal tissues.

“ It still remains for us to trace the influence of excitants of this function in some more hidden cases. It is almost certain that the gall-ducts, the ureters, and other excretory canals, are endowed both with incident and excitant, and with reflex and motor, nerves. The passage of a biliary or urinary calculus excites vomiting: exposure to cold, a loaded intestine, certain passions, and in infants mere dentition will, on the other hand, arrest the flow of bile and induce icterus.

The influence of the excitants of this system of actions, considered as *remedies*, is little known. One of the most interesting examples of this kind is that of the application of cold to the face and to the general surface, in some cases of suspended animation. As a remedy in the cases of the still-born fœtus and of drowning, the sudden contact of cold water is most important. I have already alluded to the use and influence of the cold water douche in cases of hæmorrhage from inaction of the uterus.” 157.

10. *Retrograde Action in Spinal Disease.*—This subject is considered by our author to be involved in obscurity. It has been observed, he says, that an irritation of the middle part of the spinal marrow, below the origin of the brachial plexus, induces in some decapitated animals, and especially the cold-blooded and the very young of the warm-blooded, distinct movements of the anterior extremities.

“ I removed the head of a young turtle: on pinching and galvanizing the lower extremity of the medulla oblongata, there was an excited act of inspiration. The same event occurred on stimulating the nostril, the intra-maxillary or palatine fringes, and the internal part of the larynx.

I then laid bare the middle portion of the spinal marrow by removing part of the shell. On pinching or galvanizing this, *both* the *anterior* and *posterior* fins were moved.

I took a frog, separated the head, and divided the spinal marrow low in the back: I then stimulated the lower end of the upper portion of the spinal marrow with the forceps; the anterior extremities moved in the most remarkable manner:—they were gently raised, without being affected with the *twitchings* seen in the inferior extremities when the upper part of the lower half of the divided spinal marrow was stimulated.

I was next anxious to perform these experiments on an animal of warm blood. I chose for this purpose a rabbit of six days old.

* The same effect is said to have been produced by the *secale cornutum*, in an experiment performed by M. Velpeau.

I first removed the head. I then stimulated the lower end of the divided medulla. There was an immediate act of *gasping*; I then divided the spine in the back, and stimulated the lower end of this middle portion of the spinal marrow; the anterior extremities were immediately moved." 159.

Dr. Hall, in reference to the question, whether retrograde actions of the spinal marrow take place in disease, cites three cases which, however, do not seem to us very satisfactory. We therefore pass them by.

Referring to these cases, and to the subject that they are intended to illustrate, Dr. Hall observes:—

"It is obvious that the question agitated in this place is one of great moment in the diagnosis of diseases of the spine; for if there be in disease or accident, retrograde influences of the spinal marrow, we must not always conclude that the disease or injury is situated *above* the origin of the nerves affected. It is equally obvious that the whole subject needs new and accurate observation.

I trust that one advantage will arise from the brief remarks which have been made in this communication, viz., that in every case of cerebral or spinal disease, and disease of the nerves in their course, the condition of the reflex actions, and of the retrograde influences of the spinal marrow and nerves, will henceforth be carefully examined. The first of these subjects has already made great progress; the second has scarcely been touched upon in medical writings. I will venture to suggest that cases of caries of the vertebrae appear to afford the most probable example of diseases *limited* to a given region of the spinal marrow, and therefore the best for the latter kind of inquiry. They afford examples of *irritation* before morbid processes have induced *disorganization*. The questions to be considered are two. 1. Is there paralysis? 2. Is there spasmodic action, in parts receiving their nerves from portions of the spinal marrow *above* the seat of the disease." 163.

And Dr. Hall concludes by submitting to the Society a certain number of propositions—inferences from the facts stated or observations made.

1. It is proved by the series of facts which have been observed in the human subject, that the excito-motory reflex actions are independent of sensation and volition, however they may be accompanied by sensation, or influenced by volition, in the perfect animal.

2. It is proved as a consequence, that the reflex actions are dependent on another principle of the nervous system; and it is proved by a series of experiments, that this principle is the *vis nervosa* of Haller, acting according to a new reflex law.

3. The phenomena of the excito-motory reflex actions are obvious in cases of paralysis, in proportion as that paralysis is more complete; they are therefore, more observable in paraplegia, than in hemiplegia, in general, but in each of these according to their intensity; they are therefore not only independent of sensation and volition, but inversely as these, frequently disappearing as these return.

4. In accidents, as in experiments, the excited reflex actions are not immediately observed, but are manifested only after the lapse of certain intervals of time; it is plain therefore, that the first influence of shock, is to diminish the excito-motory power; and this may remain until the patient falls a prey to the accident; as in the case noticed in Dr. W. Budd's paper.

5. It is observed that at a subsequent period, in more favourable cases, the excito-motory power is not only restored to its normal condition, but morbidly augmented.

6. This is especially observed in certain diseases, as tetanus, the effects of strychnine, &c.

7. The reflex arcs of the nervous system will be imperfect in cases of disease or injury of the lumbar or other regions, as in the case noticed in Dr. W. Budd's paper, and the reflex actions will consequently be absent; a fact which affords, in its turn, an important source of diagnosis, as to the seat of the disease.

8. In certain cerebral affections attended by coma, the presence or absence of reflex actions, in the eyelids especially, gives us an index of the degree of severity of the disease.

9. Certain diseases, as hydrophobia, epilepsy, hysteria, and certain remedies, as strychnine, cantharides, &c., not only induce augmented excitability, but manifest their effects precisely upon the organs which are, physiologically, under the influence and dominion of the excito-motory power.

10. There are new forms of disease of the true spinal functions, not hitherto described, such as the dysphagia, the peculiar action of the rectum, &c., which have been briefly noticed.

11. Certain parts, as the sides of the thorax, the soles of the feet, &c., are more susceptible of the excitement in question than others.

12. Dr. W. Budd has very justly observed, that in many cases of violent reflex, and even convulsive actions, there was no sense of fatigue, and little emaciation of the muscles. In fact, fatigue is a cerebral state, and cannot be expected to occur in the cases in which the reflex actions are most observed; and emaciation is most obvious in spinal paralysis, in which the reflex arcs being interrupted, the reflex actions are also precluded from taking place. Fatigue is *felt* severely after violent attacks of epilepsy and other spasmodic diseases, in which the cerebral functions are afterwards restored.

MEMOIRS ON SOME PRINCIPLES OF PATHOLOGY IN THE NERVOUS SYSTEM.
By MARSHALL HALL, M.D.

MEMOIR III.—ON THE DISTINCT INFLUENCE OF VOLITION, OF EMOTION, AND
OF THE *VIS NERVOSA*.

Dr. Hall observes that there are *three* causes or principles of muscular motion in the animal economy, besides the motor contractile power in the nervo-muscular fibre itself; viz., *volition*, *emotion*, and the direct and reflex actions of the *vis nervosa*. He first illustrates that of *volition*, but it does not appear necessary to follow him there. He next passes to that of *emotion*. He dwells on its frequency in man, its force, and its effects in inducing and complicating diseases of the nervous system.

In healthy circumstances, he says, the influence of emotion is diminished or counteracted by that of volition. But not only does emotion remain in connexion with the hemiplegic limb when sensation and volition are severed from it, but that emotion exerts its influence precisely upon those muscular organs which are under the influence of the *vis nervosa*, or excito-motory power: viz., the orifices and sphincters, the agents of ingestion and egestion; and as the *vis nervosa* acts *directly* upon certain internal organs, as well as

reflectively upon those just mentioned, we find the heart, the intestinal canal, the organs of secretion, &c., especially under the influence of emotion.

"Sensation and volition thus are seated in the cerebrum and its prolongations; emotion in the true spinal and the ganglionic systems. It is this distinct view of the subject to which I wish to draw the attention of the physiologist and pathologist." 173.

"Another form," says Dr. Hall, "of muscular action, if not of emotion, is that seen in the muscular system in general, and designated *tone*; the effect, I believe, of the constant agency of the *vis nervosa*. Far less obvious during the healthy condition of the system, it is made very manifest in certain circumstances of disease, and on the first cessation of the animal functions in death. When the influences of volition are withdrawn in hemiplegia, the hand and arm become much and permanently contracted. The influence of the same power is observed immediately after death, in the phenomenon termed cadaveric rigidity." 174.

With Dr. Hall's great ingenuity and penetration, we cannot help suspecting a tendency to rapid generalization. For example, *cadaveric stiffening* is at once decided to be *tone*, although there are many strong arguments, to say the least, against it. And the history of the doctrine of the nervous system must teach circumspection, when we come to reason on such principles as emotion. But this *en passant*.

Dr. Hall proceeds to pass in review the various diseases of the nervous system calculated to illustrate the questions before him.

1. *Of the Diseases of the Cerebral System.*—Dr. Hall reverts to hemiplegia, which dissects and severs, as it were, the cerebral from the true spinal system, volition from emotion and the *vis nervosa*.

After several observations, Dr. Hall concludes that the effect of hemiplegia is to paralyse the power of volition on the opposite side of the body, whilst the influence of emotion on this side remains. The seat, the source of these, must therefore be different. Those of the former are higher in the cerebrum, those of the latter lower down,—below the disease, probably in the medulla oblongata. Volition acts along fibres which decussate and affect the opposite side of the frame; emotion, like inspiration, has probably its course along another set of fibres, which do *not* decussate.

We may conclude, then, that hemiplegia severs the different motor powers from each other, and demonstrates their individual and separate existence: the influence of volition is cut off; that of emotion is occasionally, that of the *vis nervosa* constantly, energetic. Paralysis in regard to volition; agitation on occasions of emotion; tonic contraction from the constant action of the *vis nervosa*; such are the facts presented to our observation and consideration.

2. *Of the Diseases of the True Spinal System.*—Tetanus may be taken as the purest example of disease of the true spinal system. Whilst it spares the cerebrum, and with it the intellectual functions, it affects all those organs and actions of ingestion and of egestion, and, in a word, of the excitomotor system, which are untouched by hemiplegia. Deglutition, respiration, defæcation, are variously impeded.

Traumatic tetanus, proceeds Dr. Hall, being a series of morbid reflex
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actions, affords the type of affections of the system of incident and reflex nerves, and of their combiner, the true spinal marrow. The morbid influence is also retrograde as well as reflex. In disease originating in the spinal centre, the effect is usually less general, because retrograde; but it is not less marked because more limited.

Still more limited, in its effects, is disease seated in the reflex or muscular nerves. Such disease is seen in the cases of spasmodic tic and torticollis. Spasmodic tic frequently arises from the influence of exposure to cold; the first effect is generally paralysis; the second, tonic or clonic spasm.

Passing over some cases we may cite Dr. Hall's conclusions: namely—that the seat of volition is the cerebrum, and that its action is along the fibres which *decussate* in the medulla oblongata, and that the seat of emotion is below that of volition, and that it acts along fibres which probably do *not* decussate. In these respects the effects of emotion resemble those of respiration, as seen in yawning, and this function is known to act in a direct manner, from the medulla oblongata *not* decussating. The same remark, and for the same reasons, may be made in regard to the tonic action of the *vis nervosa*.

Volition has an object, an aim. Emotion and the *vis nervosa*, however subdued to certain laws impressed by the Creator, and destined to special purposes, are aimless on the part of the individual, nay, frequently *opposed* to his volition.

According to the views of M. Flourens, and according to the emphatic expression of Professor Müller, volition acts upon the fibres of the medulla oblongata, as the finger upon the keys of a harpsichord. So do emotion and the *vis nervosa*. Where then is the difference of the effect produced? These agents act upon different instruments!—Volition along the intra-vertebral *chord* of cerebral *nerves*; emotion, and the *vis nervosa*, upon the fibres of the *true spinal marrow*.

These memoirs are valuable to the last degree.

ON THE PRESENCE OF SULPHUR IN CYSTIC OXYDE, AND AN ACCOUNT OF
A CYSTIC OXYDE CALCULUS, IN THE MUSEUM OF UNIVERSITY COLLEGE,
LONDON. By HENRY BENCE JONES, B.A. &c.

Mr. Jones is a young gentleman who has devoted some attention to organic chemistry, and is likely to excel in it. The object of his present paper is to corroborate a statement which was first announced by M. Baudrimont in France, and, subsequently, confirmed by M. Thaulow, in Germany,—that cystic oxyde calculi contain sulphur in considerable quantity.

Mr. Jones identified a cystic oxyde calculus, of considerable size, in the museum of University College, London. Passing over a very scientific account of it, for which we must refer our readers to the paper itself, we may state what was made out by Mr. Jones in relation to the sulphur.

The mode, he informs us, recommended by Liebig for obtaining pure cystic oxyde was followed in examining the calculus with regard to the presence of sulphur. Of ten grains of the calculus, treated with ammonia, about nine grains were dissolved; which is the proportion of cystic oxyde; the remainder being animal matter and phosphate of lime. On the spon-

taneous evaporation of the ammoniacal solution, crystals were formed, of which five grains were treated with nitric acid free from sulphuric; violent action ensued, after the cessation of which, some crystals of pure nitrate of potash were dropped into the solution, and the whole, after being evaporated to dryness, was gently ignited in a platinum crucible. The white fused mass resulting was alkaline to test paper, and its solution neutralized with nitric acid, gave on the addition of nitrate of baryta an abundant white precipitate, insoluble in the last named acid. This precipitate, collected on a filter, washed, dried, and ignited, weighed 6.94 grains, corresponding to .9576 of sulphur, or above 19 per cent. This is considerably less than the amount given by M. Thaulow, but from the smallness of the quantity operated upon, from its having been examined as crystallized from an ammoniacal solution, and from other sources of error, the result must by no means be considered as throwing any doubt on the correctness of Thaulow's analysis, while it confirms the existence of a large quantity of sulphur in cystic oxyde. Whether the sulphur be variable in quantity, or be sometimes altogether wanting, future observation alone can determine.

We have completed a pretty close account of the first half of the Society's volume. In our next number we shall return to, and conclude it, and we think our readers will agree with us in our high estimate of its value.

**A PRACTICAL WORK ON THE DISEASES OF THE EYE, AND THEIR TREATMENT, MEDICALLY, TOPICALLY, AND BY OPERATION.
By Frederick Tyrrell, &c. &c.**

[Continued.]

In our last number, we introduced this excellent practical work to our readers, and brought under their notice its author's opinions and practice in reference to the ophthalmiæ. We shall now take up the volume again, and glean here and there the practical hints which abound in it. For, as we observed on a former occasion, *practical* merit is its characteristic.

We first turn to some morbid conditions of the conjunctiva, not coming within the class of the positive ophthalmiæ.

Polypi of the Conjunctiva, may be elevated by a pair of forceps, and separated from the conjunctiva, by means of the scissors, or knife; after which, the nitrate of silver, in substance, should be applied to the surface of the wound, and weak astringent lotions frequently used.

Pterygium.—Membranous, or fleshy, it appears to result from continued chronic inflammation—is frequent in warm climates, rare in this or colder ones.

As long as the pterygium does not extend to the surface of the cornea, local stimuli and astringents are best for it. If the surface of the cornea has become implicated, nothing but an operation is of service.

"A slender bladed knife should be passed between the pterygium and the sclerotic coat, having the cutting edge towards the cornea; the pterygium should then be separated from the sclerotic, as far as the margin of this transparent structure; in which situation the edge of the knife should be made to divide the morbid texture, so as to leave the portion in connexion with the cornea untouched; the flap thus formed over the sclerotic, should be elevated by a pair of forceps, and the separation of the pterygium from the globe completed, as far as its base or outer attachment, when it should be cut off, either with the knife or scissors, close to the sound membrane; a little care is afterwards requisite to prevent an inflammatory process, and a reproduction of the disease; and I have usually found the simple astringents, as the solution of alum and of the acetate of lead, sufficient for this purpose, keeping the patient perfectly quiet, until the healing process has been completed." 189.

Soon after the operation, the portion of pterygium left over the cornea, gradually disappears. Should the operator have incautiously excised it, an opaque deposit subsequently is developed.

Fræna.—Uniting opposed surfaces of the conjunctiva, common as they are after the introduction of lime into the eye, would seem to be given up by Mr. Tyrrell as a bad job.

"For such disease, I believe there is little that can be done, either by medical or surgical aid;—after the occurrence of the injury, which I have described as giving rise to this affection, I have repeatedly tried, by the greatest care and attention, to prevent the formation of fræna; and although, in some instances, I have succeeded in preventing the immediate inosculation of the granulations, yet I have never been able to prevent the formation of a frænum; it has appeared to me, that a contraction of the cicatrix takes place after the healing process is completed, similar to that we so frequently see in the extensive cicatrices, formed after burn of the integuments. I have, with the utmost pains and patience, effected the removal of such bands, and watched the after process of cure; but am now convinced, after repeated trials, that such operations are worse than useless, as they cannot be accomplished without severe suffering, and do not eventually, at all benefit the patient. In two cases, after excising the band or frænum, I kept a very thin and smooth piece of silver constantly between the eyelid and globe, so as effectually to prevent inosculation of granulations, as the surfaces healed. When perfectly healed, much good appeared to have been effected; but, in less than six months, contraction had taken place of the new-formed matter, and fræna were developed as bad as, or worse than those which I had removed." 193.

Ecchymoses of the Conjunctiva.—When the extravasation is extensive, or the action of the absorbents very tardy, Mr. Tyrrell has recourse to a light poultice, made by mixing some of the black-briony root, scraped finely with a little crumb of bread. This is placed in a muslin bag, over the palpebræ, for several hours together; and, usually, it has an excellent effect in promoting the action of the absorbent vessels.

Escharotic Substances in the Eye.—Immediately after the introduction of lime or mortar into the eye, great relief will be obtained by the free ablation of the organ with weak vinegar and water, in the proportion of about a tea-spoonful of the former, to half a pint of the latter. It should be used warm, and if the means are at hand, by injecting a portion of it into the eye, its beneficial effects will be increased. Otherwise, some of the solu-

tion may be dropped into the eye. The good effects of the application result from its chemical action on the lime, which destroys its caustic property and renders it soluble, so that it no longer acts as an irritant. After injury from acids, some alkaline preparation, in solution, will be most serviceable, as a solution of the carbonate of soda or potash; or, in case such are not to be readily got at, common soap and water will prove a good substitute. These applications will be most serviceable if injected into the eye, or dropped freely upon the conjunctiva.

When heated metal has occasioned the mischief, all that can be done immediately, is to remove the particles that may adhere to the conjunctival surface, or lodge beneath the eyelids.

Subsequently, the treatment must, in all cases, be similar, and such as is calculated to moderate excessive inflammation.

AFFECTIONS OF THE CORNEA.

1. *Corneitis*.—Mr. Tyrrell's description of this is very good. But it is not requisite to transcribe it. We may observe, however, that functional disturbance materially affects it, and more particularly deficient cutaneous action. Mr. T. has also sometimes found, in young and delicate females, that error in the periodical uterine secretion, has had an important effect over the corneitis. It is also modified by the condition of general power.

In the treatment, he recommends the influence of mercury, but gently administered, and closely watched. He would begin usually, in children, with one grain of mercury with chalk, and generally combine with it two or three grains of the compound powder of antimony. The frequency of the dose must depend on the power of the patient, and it may be necessary to intermit it. Besides the exhibition of the mercurial, in most instances, it is necessary to give some tonic remedy; and the selection of this, must depend upon the condition of the principal secretions, or of the circulating fluid. Where the secretions of the digestive organs are regular, and the patient merely wants power, the preparations of bark, as quinine, or the solution of yellow bark, will be found of service; but if, at the same time, with the want of power, the patient is unusually pallid, and the extremities cold, some preparation of steel, will effect more good than the bark. In cases occurring with a marked scrofulous diathesis, he has prescribed small doses of iodine, with hydriodate of potass in some light bitter infusion.

From amongst several cases, we select one. It is, perhaps, related a little diffusely, but as an illustration, it is not without its value.

"I lately saw a nobleman, who had been the subject of corneitis in both eyes, for above five months. It occurred in the latter part of the winter, and whilst he considered his general health to be good; but he had, for a week or two previously, experienced unpleasant rheumatic pains, about his shoulders and neck. The means, resorted to, at first, to relieve the ocular disease, were altogether of a depletory kind; and, under such treatment, the disease advanced. Other advice was then called for, and he took colchicum and mercury, and used further means of depletion locally. He still got worse. Another opinion was then obtained, and mercury was prescribed in large and frequent doses, with a continuance of leeching and cupping locally, with a spare diet. The mercury

produced diarrhoea, and great general depression and debility, so much so, that it could not be continued. The hydriodate of potash, with iodine, was also given, but it produced distress of stomach, and could not be gone on with. A more generous diet was then allowed; leeches were occasionally applied to the eyelids; and counter-irritation was promoted by daily friction on the temples. His general health now improved, and the ocular affection became, in a degree, mitigated; and, in this state, I was requested to see him. I found considerable intolerance of light; numerous conjunctival and sclerotic vessels, filled with red blood; both corneæ nebulous, but not sufficiently so, to prevent my ascertaining that the irides were grey or blue. I could not detect vessels, filled with red blood, on the cornea. The patient could discern the outline of a person, but could not distinguish features. His general aspect was pallid, with a look of depression. The hands were rather cold, and the pulse quick but feeble, and the skin felt somewhat harsh and dry. I recommended a continuance of generous diet, and of such stimulus as was found agreeable and beneficial; that he should take one grain of mercury with chalk, and two of compound powder of antimony, night and morning, (there was no evidence of mercurial action at this time,) with some cusparia and ammonia, twice a day; that he should be immersed in a warm bath every other day, for ten minutes at a time, at a temperature not exceeding 96°; that he should be allowed exercise in the open air daily, when the weather was dry, and the wind not from the east or the north. I further consented to the continuance of slight counter-irritation, on the temples, by friction; and the application of a leech or two, to the lower eyelid, in case of a recurrence of pain; and a drop of a solution of belladonna, (which had been used for some days previously,) was also to be applied as before. After eight days I saw the patient again, and found very considerable improvement. The intolerance of light was greatly diminished, and on my approaching him, he said he could distinguish my features, so as to be able to recognise me, in future, with facility. The red conjunctival vessels in the left eye had nearly disappeared; and the cornea, to rather more than half the upper part, had regained its transparency. Nebulæ still existed at the lower part, so that he could not distinguish objects below the eye. The right eye still exhibited some degree of conjunctivitis and scleritis, and the entire cornea remained hazy, but not so densely so, as on my previous visit. He had not pursued the plan of treatment recommended to its full extent, inasmuch as he had not taken more than two or three doses of the cusparia and ammonia; and, after two or three days from my first visit, he had omitted one dose of the mercurial in the day, which he had been desired to do, if he had any symptoms of disturbance of stomach or bowels; and this he had warning of; but in diet, exercise, and use of the bath, he had been most regular: and he applied two leeches, on two occasions, to the lower lid of the right eye. A continuation of the same plan was urged, and I saw him again, after the interval of a week. His progress, during the interval, had been most satisfactory; a further improvement having taken place, both as regarded the local disease and the general health. He had, however, taken a few doses of the hydriodate of potash, by the advice of his surgeon, and this had created a slight degree of gastric disturbance. It was, therefore, agreed that it should be omitted, whilst, in every other respect, the treatment was to be continued as before. After a week's interval, again I found still further progress to recovery, the left cornea being nearly clear, and the right presenting only slight nebula at its lower and outer part; but the vessels of the conjunctiva and sclerotic still exhibited, in a trifling degree, unnatural distention by red blood. The progress had been so steady and satisfactory, that we considered our patient might safely quit London, which he did a few days afterwards; I saw him just before he left town, and found little more than slight nebula of the right cornea remaining." 225.

Of Inflammation of the Cornea with Vesication.—We notice Mr. Tyrrell's account of this affection—a partial separation of the conjunctiva of the cornea, by effusion of serous fluid.

The symptoms, says Mr. Tyrrell, occur in paroxysms, and there is an extremely irritable condition of the eye; great intolerance of light, severe darting pains, a sensation, as if a sharp and hard foreign particle, were lodged beneath the palpebra; increased heat and lachrymation, creating a sense of scalding. These attacks are gradual in their approach, being preceded by slight uneasiness; but they subside suddenly, leaving only a dull aching pain, which is augmented towards evening.—There is not any useful vision, even between the paroxysms.

Spasmodic action of the orbicularis muscle, from exposure to light during the paroxysm, and a discharge of the superabundant fluids; evidence of increased action in the conjunctiva and sclerotic, many of their vessels being filled with red blood; only few of the latter, but very many of the former, being perceptible. A partial nebulous condition of the cornea exists, in the centre of which, a small vesicle distended with fluid, may be perceived, if the eye be examined during the paroxysm; otherwise, a thin portion of loose membrane, which is partly separated, much as the cuticle is, after the puncture of a cutaneous vesicle.

Mr. T. has only seen this disease in adults, out of health, and, in most instances, when there has been a tendency to rheumatic affections. Local remedies he has seen no benefit from, and it is only from constitutional treatment that he has seen any. A case will illustrate *that*.

“In the first well-marked case of the kind which came under my care, I tried numerous local applications, but without producing any good; and I also pursued several plans of general treatment, for a long time, but could not effect any decided improvement. The patient was also the subject of extensive urethral disease, on which account, (after he had been for many weeks in attendance at the Ophthalmic Hospital,) I admitted him as an in-door patient, at St. Thomas's Hospital, where, in addition to the alterative medical treatment, I directed the use of the warm bath every other day, for the relief of urethral affection; he was taking at the time, small doses of the bichloride of mercury with sarsaparilla, and had been doing so for several weeks previously, as it appeared to check the progress of the ophthalmic disease, although it had not produced any decided improvement in it. After he had taken the bath two or three times, a very marked alteration, for the better, took place in the eye; and I was much gratified in a few weeks, to find that it was perfectly restored.” 243.

Several cases have since done well under treatment of a similar kind. But the preceding may be taken as a sample of the whole.

Of Inflammation of the Cornea with Deposition of Earthy Matter.—Mr. Tyrrell believes that the deposit he is about to describe is earthy, and that it has an inflammatory origin.

Most frequently the cornea is partially dotted or speckled with small irregular, dull, and defined opaque spots, clustered together, and occupying various positions, in different cases; being sometimes, near the centre, and at others, towards the circumference, but not confined to any part of it. If viewed obliquely, these little patches appear slightly elevated, from the surface of the conjunctiva. If the inflammatory action is still proceeding, the

cornea is nebulous, from slight interstitial deposit of fibrin, especially beneath the seat of the superficial disease. This nebula, however, soon subsides, after the inflammation is subdued, when the small opake spots on the surface, become more distinct and defined.

He has occasionally seen this deposit confined to one spot an eighth of an inch in diameter. He has twice removed the substance with a needle, but, unfortunately, did not submit it to chemical analysis. He doubts the correctness of the opinion that these deposits are precipitates from the solutions of metallic salts, particularly those of lead.

"In several instances, I have seen this appearance, when the patient has not previously made use of any metallic preparation. In some, I have seen the deposit increase, when I have been confident that merely tepid water had been applied—and further, I have known a second and third attack of disease, creating this deposit, without any of the solutions alluded to being employed.

Supposing such an appearance to result, from the continued use of a solution of the metallic salts, I consider that it would be a common occurrence at the Ophthalmic Hospital, as the acetate of lead, in solution, is the common lotion prescribed in cases of simple ophthalmia, with ulceration of the cornea; and such cases are very numerous.

The cases, however, in which the cornea exhibits the appearance above described, are extremely rare." 248.

He has seen this disease in children, and in persons of middle age, but never in advanced age—principally in those of scrofulous habit, and, in most instances, also subject to rheumatism or gout.

The first object, in treatment, is the removal of any inflammatory action that exists. He has generally employed a weak solution of the acetic or hydrochloric acid as a lotion, and, with the best effect, in promoting a gradual removal of the deposit. In a few cases, in which the affection of the cornea, has been combined with a chronic ophthalmitis, and the disease has been altogether of long-standing, he has failed, and he has known the eye destroyed by a slow disorganizing process.

Of Ulcers of the Cornea.—An ulcer of the cornea, says Mr. Tyrrell, must be in one of the following states.

First, that which we may term healthy, when its surface and circumference exhibit a degree of haziness, or opacity, of a whitish or grey aspect, which is owing to the effusion of adhesive matter on the surface, and in the surrounding texture, which is essential to the healing of the part.

Second, a state in which too much action exists, and which may be recognized by the appearance of small vessels carrying red blood, ramifying into the newly effused matter in the ulcer, which, as described in the first case, renders its surface, and the part immediately around it, nebulous or opake.

The third state, is that in which there is an evident want of action,—when the ulcer appears clear and transparent; merely a small dent presenting itself on a close inspection of the surface, as if a small portion had been cleanly excised by some sharp instrument; there is no apparent deposition of lymph, or any appearance of increased action, as in the two former instances.

The first state, combined with inflammation, indicates that the inflammatory process is not of a very severe kind.

The second shows, that the local action is beyond that which is necessary, and, therefore, that it should be checked.

In the third form, there is a want of action, which shows the surrounding inflammation to be of a chronic or indolent kind, requiring the use of local, as well as general stimulants.

Mr. Tyrrell thinks that on a right understanding of the preceding conditions, hinges the proper mode of treatment. Thus, he says, when the ulcer presents the appearance first described—as the healthy action is proceeding, it is merely required to watch the case, and, by timely application, to prevent any increase of action. In the second instance, the necessity for depletory measures is clearly indicated, and these must be steadily pursued until the visible vascularity of the ulcer is subdued.

In both states, the most simple and inoffensive local application must be employed—as tepid water, or the decoction of poppy-heads, or chamomile flowers. The third form is more difficult to manage. It must first be ascertained whether there is simply a deficiency of local action, or of both local and general. If the former only, the application of mild stimuli only is requisite. When there is feeble constitutional power as well, both local and general remedies are needed. The stimuli employed must be at first weak, only of sufficient strength to create a slight smarting when applied; they are best used in the form of solution, so that they can be thrown immediately on the affected part, by means of a syringe. The application should be repeated, every five or six hours, until a slight haziness around the ulcer, indicates the commencement of the proper action—and, at the same time, the strength of the solution should be increased gradually, or a stronger stimulus employed, each time, until the desired effect is produced. The best stimuli, are the salts of zinc, and the nitrate of silver. Mr. Tyrrell prefers this greatly to the nitrate of silver in substance.

It often happens, says Mr. Tyrrell, that ulceration of the cornea takes place in the chronic stages of purulent or strumous ophthalmia, when a nebulous and vascular condition of the cornea exists, as consequent upon the granular state of the eyelid, or continued scrofulous inflammation.

In such cases the ulcers are generally indolent, being transparent, although many vessels carrying red blood are apparent in the conjunctiva corneæ; so that upon superficial inspection, the presence of these red vessels might be taken as evidence of too much local action, and the ulcers be considered as inflammatory: but if a careful examination be made, the red vessels cannot be traced to the ulcers.

“In addition to the forms of ulcer of the cornea which I have enumerated, two others exist, to which the term sloughing may be applied; the one is dependent on an excess of surrounding action, producing an impediment to the circulation; when a portion of the cornea, losing its vitality, assumes a dense dull opaque appearance, and becomes separated, by a process of ulceration, which I have described when speaking of purulent ophthalmia. But little mistake can be made in the treatment of such a case, as the surrounding acute inflammation is generally sufficient, to indicate the proper plan to be pursued.

The other form of sloughing ulcer depends on the want of local action; and

the sloughs that are separated from the surface of the ulcer, are of a dirty ash color; they are thrown off in successive thin layers. In this case there is but little, if any, evidence of increased action; and when not covered with slough, the ulcer is clear and transparent." 257.

Staphyloma Corneæ.—Mr. Tyrrell in describing the operation for the excision of the staphyloma, observes that "the operation cannot be effected without incising the iris, which is always adherent to the staphylomatous mass; and its vascularity is, in some cases, so much increased, in consequence of the previous disease, that severe hæmorrhage occasionally ensues: to such an extent have I known this occur, that I should be averse to perform the operation on a child of feeble power. The bleeding may be in a measure restrained by cold and pressure; but the patient cannot bear the latter to a sufficient degree, to check the hæmorrhage altogether, and it sometimes continues for many hours.

In performing the operation, a sufficient opening should be made, to allow of the escape of the humors; otherwise, a fresh staphyloma is likely to form; but I should not advise the operator to interfere with the sclerotic tunic, as I have observed that severe suppurative inflammation has followed, in several cases in which that coat has been divided."

"*Partial Staphyloma*," he adds, "often exists under circumstances, which render its reduction a matter of importance or anxiety, as when there is sufficient of the healthy cornea left to enable the surgeon to form an artificial pupil beneath, or when the projection gives rise to much irritation or deformity. I have succeeded, in several instances, in effecting a reduction of partial staphyloma, by the careful application of nitrate of silver, or hydrate of potash, in substance: I have applied the escharotic first at the base of the projection, taking care not to injure the remaining sound portion of the cornea—the effect has been the separation of a small slough; but previous to such separation, a deposit of fibrin beneath, by which the deeper part has become more solid and strengthened; after the part has recovered, from one application, I have made a second close to, but not upon the same spot, and nearer to the summit of the projection: again and again, I have repeated this operation, acting upon the more prominent part, until a considerable or perfect reduction of the staphyloma has been accomplished; and this has enabled me, in a few cases, to form an artificial pupil, subsequently, of much more utility to the patient. I prefer the hydrate of potash, unless the projection be very small; for its use is followed by a much larger deposit of fibrin, than results from the nitrate of silver. Before applying either, the portion to be used, should be reduced to a fine point; and, when used, the surface should be cleansed from secretion, by a piece of lint; the application should be lightly made; and, immediately afterwards, a little sweet oil should be dropped into the eye, before the eyelids be allowed to close."

Conical Cornea.—In the early stage, he thinks it may be retarded, if not prevented from increasing by the local use of stimuli. But, though he knows of nothing that has any beneficial effect upon bad cases, he has succeeded in affording much relief by a very simple plan. This consists in

altering the position of the pupil, and removing it from beneath the centre of the cornea, or that part which has its figure most changed, to near the margin, when the least change has occurred; the error in refraction is consequently much lessened, and the vision becomes more perfect, and the focus lengthened.

"I effect the change, in the position of the pupil, in the following manner. I make a puncture, with a broad needle, close to the junction of the cornea and sclerotic; but through the former, and at the part corresponding to the interval between the abductor and depressor muscles; that is, at the outer and lower part of the cornea, (the instrument should be just of sufficient size to effect an aperture merely large enough to admit the passage of a small blunt hook;) I then introduce a small blunt hook, by the aperture in the cornea, and catch the pupillary margin of the iris; and the margin thus caught, I carefully draw out of the aperture by the hook; and, subsequently, as much of the membrane as is requisite to cause the pupillary opening of the iris, to change its position, from the centre to the outer and lower part of the cornea. The portion of the iris, brought out by the hook, I then cut off by a fine pair of scissors, or leave it hanging from the wound, in which part of this membrane is held, and, subsequently, becomes fixed in the cicatrix; whilst the projecting part separates by ulceration or slough. I usually cut off the projecting piece of iris, close to the wound; otherwise, it is apt to create some degree of irritation, by the friction of the eyelid, but should it be left, and irritation arise, it is soon remedied, by touching the portion of iris with nitrate of silver. I have performed this operation seven or eight times; and, in each case, it has benefited the vision, and, in two cases, very considerably. The advantage gained is more than adequate to the risk incurred; for, in no instance, has any evil followed, beyond the slight degree of inflammation, necessary to repair the mischief, occasioned by the operation." 279.

SCLEROTITIS.

Passing over Mr. Tyrrell's description and general mode of managing sclerotitis, we may mention the following hints.

In those cases, says Mr. T., in which the constitutional powers are naturally feeble, or have been reduced by medical discipline, a generous diet should be allowed; still, however, without acids, or fermented liquors; the bowels should be kept regular, and mild tonic medicines resorted to. "I have found," he goes on to say, "the most decided and rapid benefit, from the use of small doses of bark and dried carbonate of soda, (five grains of each,) given about every four or six hours. This remedy was mentioned to me, some years ago, by Mr. Wardrop, and it is a very valuable one, inasmuch as I repeatedly find it successful, after the continued, but useless, trial of other means.

It appears necessary to employ the small doses, to produce the beneficial effect: for, in several cases, I have known scruple or half-drachm doses administered without benefit; and the same patients recover quickly, by resorting to the smaller quantities.

One of my colleagues had suffered from a slight attack of sclerotitis, for several weeks, and the disease had baffled the ordinary local and general remedies; tonics had been used freely, and, among them, large doses of bark and soda; the small doses, tried at my suggestion, soon relieved the eye from the diseased action." He has found a change in the tonic service-

able. He prefers warm applications to cold—dry warmth to wet—the former effected by means of small muslin or thin flannel bags, filled loosely with chamomile flowers, and heated in a hot plate or a warming pan.

AFFECTIONS OF THE AQUEOUS MEMBRANE.

Mr. Tyrrell assures us that three cases have come under his observation, which have proved to him, most satisfactorily, the extension of the aqueous membrane over the iris, continuous with that which lines the posterior surface of the cornea. In each of these cases slight cloudiness of the membrane existed, and the iris appeared dull and incapable of reflecting light, though not altered in color; and small tubercles could be easily perceived, both on the corneal and iritic portions of the membrane, varying from the minutest point to the size of the head of a large pin.

INFLAMMATION OF THE IRIS.

Mr. Tyrrell denies the justice, and we cannot help thinking that he is right, of those manifold varieties of iritis which ophthalmologists have been so anxious to insist on. "I deem," says he, "such division of the subject to be of no practical utility, with the exception of a division into acute and chronic, which I shall therefore adopt. In fact, I do not admit of the distinctions which have been attempted; but I consider inflammation of the iris to be the same, whatever may be its mode of origin; it may, and does vary in intensity, and in rapidity of progress; and these circumstances are depending more upon the condition of the constitutional power of the party affected, than upon the mode of origin; a specific taint by its influence upon the system, no doubt, in many cases modifies the local disease. I cannot allow, therefore, that idiopathic, traumatic, syphilitic, rheumatic iritis, &c. are distinct diseases, but one and the same affection, generated by different causes."

Mr. Tyrrell is a decided advocate for mercury in acute iritis. "I am so satisfied," he protests, "with the efficacy of mercury, in these cases, that I deem it almost a specific in pure iritis. It is probable, as asserted by some authors, that this affection may be subdued without the aid of mercury, by the ordinary depletory treatment, which is usually employed in common cases of inflammation. I am of opinion, however, that there is considerable risk in such mode of treatment; as I have known many cases, in which it has been pursued to a great extent, and has nevertheless failed in subduing the disease; although it has mitigated its severity, and arrested its progress to a great extent; but a chronic stage has supervened, which has gone on in a slower, but not less certain way, to the ultimate destruction of vision.

The mercurial plan of treatment I consider to be safe and certain, when carefully pursued; the antiphlogistic plan I consider to be uncertain, and therefore unsafe; and if it do succeed, it does not effect a cure in double the time at least, in which mercury annihilates the disease."

Mr. Tyrrell relates two interesting cases of cyst connected with the iris, in the one certainly, in the other supposed to be, dependent on a foreign substance. We quote the first case as the shorter. In both, vision was substantially lost after the performance of an operation.

A singular case of formation of cyst, in connexion with the anterior surface of the iris, occurred in a boy, sent to the Ophthalmic Hospital some

time since. The boy had been an apprentice to a blacksmith, and during his work, a small particle of hot iron penetrated his cornea, and lodged in the iris; this gave rise to severe inflammation, which was with difficulty subdued; but he recovered after several weeks, with good vision, but a slightly disfigured pupil. Some months afterwards, a small cyst was formed in connexion with the injured part of the iris, and it continued gradually to increase without suffering or inconvenience, until it acquired the size of a small pea; it was attached near to the pupillary margin of the membrane and projected into the anterior chamber; it was of nearly a round figure, and the surface was shining and white, like a delicate tendinous structure. The boy was sent up to the London Ophthalmic Hospital, under the care of Mr. Scott, who removed the cyst, but useful vision was lost.

Tremulous Iris Mr. Tyrrell believes to depend on a partial or complete paralysis of its muscular fibres. This theory he grounds on the fact of there being very little or no motive power in the iris, in all cases which have come under his observation. He affirms that the tremulous motion is always greater when the iris does not expand or contract, so as to change the diameter of the pupil, than when a slight power of contraction and dilatation remains.

Conjunctivo-Scleritis.—Mr. Tyrrell's account of this is complete. We introduce his remarks on colchicum and turpentine. "*Colchicum*," says he, "is so uncertain a remedy, that I rarely employ it. I have, however, occasionally known it to afford relief most rapidly; but, I have often used it, without its producing the slightest benefit, as regards the local affection. From the experience I have had respecting it, I should say that it rarely, if ever, does good, when any functional disorder of the stomach or bowels exists; or when the index to these parts, namely, the tongue, is at all loaded or foul; but that when the tongue is clean, and the secretions from the alimentary canal are proper, it will sometimes effect a cure more rapidly than any other remedy I know of. I use it occasionally in the following way. I first act freely upon the bowels by some drastic purge, combined with mercury; and soon after, I direct the patient to take half a drachm of the wine of the colchicum seed, combined with a small quantity of alkali, and some narcotic; and to repeat the dose every six hours. I take care to see the patient after the second or third dose, in order to determine upon the continuance of the remedy; for if it produce nausea, or affect the bowels, it seldom acts beneficially on the ocular disease; but if relief be obtained from the first two or three doses, a cure is usually promoted by perseverance in this treatment. When I prescribe the colchicum, it is usually in the early stage of the disease; not at the period at which I have recommended the use of soda and bark, or quinine; but whilst the conjunctival affection, as well as that of the sclerotic, exists."

Turpentine he has also found so uncertain that he has ceased to prescribe it. He has known it occasionally serviceable in the second stage of the affection, or when the conjunctivitis has been subdued; but he prefers small doses of bark and soda, or of quinine, to it, as more certain and safe remedies; whereas, the turpentine is liable to produce severe and continued distress. He introduces several cases very much in point.

Sclero-Iritis.—Mr. Tyrrell gives us his experience, too, on colchicum and turpentine in sclero-iritis. He tells us that he has occasionally employed colchicum in the early stage of the disease with good effect, when the tongue has been clean and the bowels regular; but very seldom are the general secretions in such order, as, in his opinion, to admit of the use of this remedy, with fair chance of success. It is in these cases, also, that turpentine has sometimes proved serviceable; and from which it, as well as bark and soda and other tonics, have obtained credit as remedies for iritis; over which they have little or no influence, but would, in most instances, act injuriously. In sclero-iritis the affection of the iris is usually secondary, consequent on, and in some measure depending upon the scleritis, and may sometimes be cured by subduing the scleritis or primary disease; but, in most cases, it would be extremely imprudent to trust to the subsidence of the iritis, and treat only the scleritis; for though the iritis is first promoted by extension of morbid action from the sclerotic, the inflammatory action is not controlled by the disease of the sclerotic; but once fairly set up it goes on independent, in a great measure, of the scleritis. Further, the disease of the iris soon extends to the choroid, and inflammatory action in these textures places the organ in great jeopardy, as regards vision; so much so, that it would be folly not to resort to a remedy, which is almost certain in its effects, in checking the morbid action of the iris and choroid, if it be properly managed, and supposing the disease to be remediable.

ABSCESS OVER THE LACHRYMAL SAC.

Mr. Tyrrell directs attention to a trifling affection which we have seen mistaken.

It is not uncommon, he says, in scrofulous children, to see a small circumscribed abscess immediately over the lachrymal sac, which, from its appearance and the symptoms it gives rise to, might be readily mistaken for disease of the sac itself; for the swelling, either by its pressure on the sac, or by displacing the inferior punctum lachrymale, and interrupting the course of the secretions to the nose, occasions an epiphora; and the nostril of the same side appears dry. Independent of diseases in the lachrymal passages being rare in children, the following circumstances will generally explain the true nature of the complaint: the rapidity with which the swelling forms, and its not being preceded by any watering of the eye or epiphora; the early discoloration of the surface of the swelling, and its not having the decided circumscribed and hard feel which abscess of the sac presents; the pain also is very trifling, in comparison with that which accompanies suppurative inflammation in the sac itself. An early opening, but a cautious opening is necessary. And, if abscess of the palpebra point at the upper and outer part of the superior palpebra, the surgeon must be careful not to pass the lancet very deep, as he may wound some of the ducts passing from the lachrymal gland, and occasion a troublesome fistulous sore.

How to Cure a Black Eye.—This, as Mr. Tyrrell observes, somewhat grandiloquently, “although an affection of trifling import, it is usually one of considerable importance to the patient unless very young; as it is generally considered a mark of a quarrelsome disposition; and often excites re-

marks which few can with patience submit to." In plain English, nobody likes to have a black eye. But how to get rid of it? When induced by external force, for the first few hours, cold should be applied; and if the tumefaction become considerable with symptoms of inflammatory action, local bleeding should be also resorted to. As soon as the symptoms of inflammation have subsided, a poultice, composed of the root of the black bryony, finely scraped, after being deprived of its external bark, and mixed with crumb of bread or flour, so as to form it of a proper consistence, should be laid over the discolored part, enclosed in a thin muslin bag; a fresh application should be made every six or eight hours, until the absorption of the effused blood be completed: this will usually take place in forty-eight hours, or a little more, even when the ecchymosis is considerable. "I became acquainted, continues our author, with this remedy, from noticing that some of our celebrated pugilists appeared, a few days after severe encounters, without any disfiguration from ecchymosis; and, on enquiring the reason of this, I found they employed the bryony root, in the manner I have described, to remove such evidence of their occupation. When the bryony root cannot be procured, the absorption may be accelerated by the use of most of the ordinary stimuli, employed in the form of poultice, as oatmeal and vinegar; muriate of ammonia in solution, mixed with bread or linseed; stale beer-grounds, &c."

TUMORS OF THE PALPEBRÆ.

Mr. Tyrrell first speaks of the small *sebaceous tumor*, which he punctures and squeezes.

Secondly, of the *Glandiform Tumor* which he thus describes. These tumors commence, in a manner very much resembling those last described, excepting that they are less numerous. At first, there is an appearance of a deposition of a white sebaceous matter beneath the cuticle; but the aspect of the tumor soon alters, it increases to a much larger size than that last described; and, occasionally, acquires a magnitude equal to that of a small bean. As it increases, the uniform white surface is interrupted by streaks, and it becomes somewhat mottled. If allowed to proceed, suppuration occurs in its centre, and this occasionally takes place, when it is of small size—not so big as a small pea; or it may not occur, until it has acquired the magnitude mentioned above: when matter forms, it gradually makes its way, by ulceration, through the summit of the swelling; and, after its escape, the cavity formed by the abscess is gradually filled up, by the increase of the morbid growth: and, after the cavity is thus obliterated, the growth is continued through the aperture by which the matter has escaped. This growth is irregular, and resembles very much in appearance the common wart, for which it is very constantly mistaken. These tumors may be readily removed by passing a lancet, or pointed knife, through the tumor, so as to divide it from base to summit, with some part of the surrounding and investing integument. After such division, firm pressure with the nails and extremities of the fore-fingers, on opposite sides of the base of the tumor, will cause it to rise, so that it may be readily detached, by seizing it with a pair of common dissecting forceps; when excised and examined, the morbid growth has a very close resemblance to a portion of a conglomerate gland, as the

lachrymal, parotid or pancreas. After the operation, the lead lotion is to be applied.

Thirdly, of *Vesicular Tumors*. They are semi-transparent; and seldom exceed, in size, the volume of a swan shot; occasionally, a single one arises, but more frequently many exist, at the same time, upon one of the lids. A considerable portion of the vesicle should be removed, and some stimulant or escharotic should be applied.

Fourthly, of *Warts of the Palpebræ*: for which he uses a fine ligature, and afterwards, strong acetic acid.

Fifthly, of *Encysted Tarsal Tumors*.

"When small, the tumor is scarcely apparent to external view, and can be only felt, beneath the integument of the palpebra; and the sensation communicated to the finger is such, as if a small shot were seated in the cellular tissue, beneath the skin; it also feels as if loose beneath the integument, and is usually situated near the centre of the tarsus. If, however, the lid be everted, a discolored spot on the inner surface of the tarsus, &c. indicates the point of connexion between the tumor and this structure. The tumor slowly increases; and many weeks or months frequently elapse, from the period at which it may be first felt, until it has acquired sufficient size to be readily perceived, on viewing the outer surface of the palpebra. The integument, immediately above the tumor, is, generally, of the natural color and appearance; unless any acute inflammatory action be set up, then it assumes a redish color. This rarely happens, until the swelling has increased so far as to be readily perceptible. It is at first hard and circumscribed; as it increases, it diminishes in density, and acquires an elastic feel; but is still firm; it seldom exceeds in size the bulk of a common pea. The spot I have alluded to, apparent on the inner-surface of the lid, is at first red, and as it increases, the centre exhibits a yellowish cast; and, in the more advanced stage of the disease, a bluish spot occupies the centre; whilst, immediately around this, the redness is still apparent: frequently more than one exists at the same time."

"The diagnosis of this disease is important, as it is most readily cured, when recognised, merely by everting the lid and puncturing the cyst, through the conjunctiva and tarsus; and, immediately that the fluid contents have escaped, breaking up the cyst, with a pointed probe, introduced through the puncture, and forcibly moved about in all directions." 376.

We cannot say that we have seen this plan always answer. We generally introduce a pencil of caustic to destroy the cyst; but even that will occasionally fail.

Sixthly, of *Encysted Tumors of the Palpebræ unconnected with the Tarsus*.—Mr. Tyrrell dissects these carefully out, if possible, without wounding the cyst. But, in those cases in which the cyst is intimately connected with the periosteum—and this is usually indicated by the indentation of the bone, he feels little inclination to meddle with them, as he has seen much mischief the consequence. He introduces several cases, we quote one.

"In one case in which an encysted tumor had existed, in connexion with the frontal bone, near the middle of the superciliary ridge, an attempt was made, I believe, to excise the cyst, but unsuccessfully; the operation was followed by excessive inflammation and sloughing; by which the bone became exposed, and subsequently exfoliated to such an extent that some months after, when the lady was sent to town for my advice, I could touch some extent of the dura mater, from the loss of a large part of the roof of the orbit. I eventually succeeded in closing the wound, and, fortunately, but little deformity resulted." 480.

A PRACTICAL TREATISE ON THE FUNCTION AND DISEASES OF THE UNIMPREGNATED WOMB. Illustrated by Plates, &c. with a Chapter on Leucorrhœa, Fluor Albus, or Weakness. By *Charles Waller, M.D.*

THE subject of uterine disorders has been so frequently and voluminously discussed of late years that one would suppose there could be no demand for another work of the kind, which merely repeats or comprises the opinions expressed in those which have gone before it: however, the subject is so important an one, that a practical treatise on some of the most common affections may still be a desideratum.

Dr. Waller has endeavoured to supply this by the book now under notice, which is made up of a series of lectures delivered by the author at the "Aldersgate-street School," and has been published in the present form, to give a more continuous, and connected view of the matters treated of, than was possible when each lecture was scattered among the pages of a weekly periodical.

The work however is not to be considered as a complete dissertation on the diseases of the unimpregnated womb, for it is only a very condensed description of a few of them, the author declaring in his preface how fully he is impressed with the force of the aphorism "*μεγα βιβλιον μεγα κακον*:" Now though we are willing to admit that a great book may be a great evil, yet it by no means follows that a small one must be the contrary, and in the present instance Dr. Waller has been so far led astray by his reverence for this dogma, as to omit the mention of many facts which would have greatly added to the utility of his plain and practical descriptions, without rendering them laboured, or diffuse.

The arrangement, or division of the subject, is a very simple one, and perhaps for all practical purposes, is as useful as the more complicated classifications adopted by some of the writers in this class of diseases; thus the only division of it is into "Disorders of the Menstrual Function" and "Diseases of the Unimpregnated Womb." The former of course including the various kinds of catamenial disturbance, and the latter, some of the principal organic lesions to which the uterus is obnoxious:—the whole subject being discussed in the following order, viz:—

1. The Function of the Unimpregnated Uterus.
2. The Disorders of this Function.
3. The Period of Female Existence designated the "Turn of Life," and
4. The Diseases of the Womb itself.

The Chapter on the "Function of the Unimpregnated Womb" presents us with no new facts, and consists of the usual observations on the periodicity of the menstrual discharge; the average age at which it first appears; the local and general changes which characterise this epoch of life; the particular part which furnishes the discharge, &c.

The author takes occasion to repudiate the idea of the menstrual fluid being possessed of any "malignant property;" but after all, it is not quite so certain that the old writers were altogether wrong in maintaining the affirmative of the question: that they *exaggerated* the mischief is certain, but that it often causes præputial excoriations to put on the characters of irrita-

ble, and to become troublesome ulcers, is a fact of which we at least have no doubt.

Emansio, and suppressive mensium, the two forms of amenorrhœa, are discussed together with chlorosis: under the first head are some brief practical remarks on retained menses from imperforate hymen, and occlusion of the os uteri: also on emansio arising from faulty development, as absence of the ovaries, &c.; but there is some confusion caused by designating "chlorosis" as one of the conditions of "Emansio," whereas this particular state is much oftener met with during temporary "suppression;" nor, in point of fact, is it necessarily the concomitant of either, for it not unfrequently happens, that chlorotic girls menstruate regularly, and *properly*; without doubt the general rule is, that if there be any menstrual discharge in these cases of chlorosis, it is scanty and pale-coloured, but there are many exceptions to it notwithstanding. Dr. Waller very justly insists on the propriety of considering the absence of the catamenia in such cases, as an effect of the generally deranged health, and not as a cause of it: indeed this opinion needs no other proof of its correctness than the fact, that in many instances the menses do not flow for several months after the general symptoms of chlorosis have vanished, and the patient has been quite restored to health and strength.

We should not imagine that any well-informed practitioner would be likely to mistake chlorosis for "pulmonary disease:" still we are warned of the danger at page 22:—the usual absence of the catamenia in tubercular phthisis, might have been mentioned in an enumeration of the symptoms common to both.

In his treatment of chlorosis our author adopts the one generally employed. He is opposed to the use of emetics, and recommends the combination of stimuli with tonic remedies in some cases: he gives a formula for pills on this principle at p. 25, to the efficacy of which we can speak favorably. To the employment of the forcing remedies called emmenagogues, Dr. Waller is stoutly opposed: in fact he never loses an opportunity of inveighing against the practice, or of shewing the absurdity of it; his remarks on this point are always judicious, and the following sentence will prove how laudably earnest he is in the matter. "The reader is earnestly implored not so far to forget rational principle as to be induced to have recourse to that empirical practice which consists in the administration of those stimulating and forcing remedies called emmenagogues."

Again, when speaking of the treatment of emansio mensium attended with plethora, for which he recommends periodical bleedings—he says, "The use of stimulating emmenagogue medicines can in nowise be justified, as the non-appearance of the discharge is the result of an action of the menstrual vessels, very analogous if not actually amounting to inflammation."

The remarks on sudden suppression are good and concise; but the disadvantages of a small book, which we before hinted at, are apparent in such sentences as the following. "Should month after month pass away without the restoration of the secretion, it will in all probability be found that other organs besides the womb are disordered, and these will then require particular attention."

Now we think it is not unreasonable to wish that a book especially

intended as a practical guide for students, should have been a little more explicit, as to these probably diseased organs. The subject of menorrhagia is briefly but ably discussed: Dr. Waller uses the term in its most extended sense, including all undue sanguineous discharges from the unimpregnated womb, of course distinguishing those which contain "integral blood," from those which are only menstrual fluid in excess.

Profuse menstruation is however, as our author justly observes, comparatively rare, and even then, it is not necessarily to be considered as a disease. In the active form of menorrhagia Dr. Waller depends mainly on blood-letting and laxatives: after which he recommends the nitrate of potass in doses from gr. xv. to xxv. "well diluted in barley water," as a most effective depressing agent; he very wisely questions the utility of mercury, and is no friend to the ergot. His description of the general symptoms of "passive menorrhagia" is as follows.

"With this hemorrhage there is a rapid reduction of the little strength previously existing; the countenance is pallid, in some cases assuming an almost bloodless appearance; the pulse hurried and feeble; the extremities, and sometimes the whole surface of the body, cold; there is a weight and pain in the head, particularly over the eyebrows and forehead; a distressing sensation of faintness and giddiness, and occasionally nausea and vomiting; laborious respiration is also a frequent attendant on the more severe and dangerous forms of passive menorrhagia." 51.

All of the remarks in this division of the subject are sound and practical; but we should imagine that the cases of this affection, where it will be necessary to "plug the vagina," must be very rare indeed; particularly as it cannot be forgotten that the discharge is, at least in part, a secretion! however, the author mentions a case which occurred in his own practice, where this plan was obliged to be resorted to, and was quite successful, even after the failure of Dr. Haighton's astringent uterine injections. (vide p. 55.)

The chapter on the "*Turn of Life*" is rather bare and meagre; a few observations are made relative to the frequency of uterine, and mammary diseases at this period, which the author explains thus—"This opinion is decidedly erroneous: the true explanation of the reason why an advance of disease is so frequently noticed at the "turn of life" is simply this, that the constitution, or the parts disposed to morbid action, are not now, as heretofore, relieved by the local determination and secretion."

The subject of Sterility or "Barrenness" is dismissed in three pages: Dr. Waller does not seem to know any more about it than his neighbours.

The second part of the "*Treatise*" is devoted to the consideration of the "*Diseases of the Unimpregnated Womb*," and the author commences the subject by a few remarks on the importance of tracing symptoms to their original cause, since the curable and the incurable diseases have often a great similarity in this respect.

On the Structure and Pathology of Hydatids, we have a longer account than usual; it is evidently a favorite subject, and two out of the six plates belonging to the work exhibit specimens of this disease. On the question of their ever being produced "*sine copula maris*," the author gives no decided opinion; he has never known them in unmarried females, "although he should feel great hesitation in pronouncing this to be an impossible occurrence."

Neither does he coincide in the opinion that these vesicular growths are morbid enlargements of the chorion, and to shew that they are not so, he refers to plate 2, which represents a preparation from his own museum, where the uterus being thickened and enlarged, is studded throughout its substance with little hydatid vesicles, a few of which project into the cavity covered by, and behind the mucous membrane: certainly the author has a right to say with regard to this:—"these appearances could not possibly be caused by any morbid alteration of the chorion."

The following quotation will give an idea of the author's opinions on the nature and origin of malignant disease.

"We believe that this and most other species of malignant disorganizations of the uterus arises from the same exciting cause: that inflammation is the *fons et origo mali*; that it is not essentially specific in its character, but observes the same laws, and yields to the same treatment as any ordinary case of inflammation; that the specific character which the disease afterwards assumes depends not upon the application of any peculiar exciting cause, but that the character of such disorder is determined by the tendency which exists in the individual constitution; and, lastly, that, therefore, the same immediate cause will produce in one, common inflammation; in a second, malignant ulcer; in a third, tubercle; in a fourth, cancer; and so on." 133.

This very naturally introduces the subject of Cancer Uteri. In the present treatise the term carcinoma is applied to the ulcerative stage, and the term "scirrhus" only to that hardened enlargement which precedes it.

The opinion already expressed with regard to the first cause of malignant disease is reiterated now: inflammatory action, and that not of a specific kind, but exerting itself in a peculiar constitution, is again stated as the origin of this dreadful malady; and Dr. Waller is very earnest in directing the attention of practitioners to the state of the uterus in all complaints of women at the period of menstrual cessation, lest from an unfortunate delicacy on the part of the patient, who will not often be induced to speak of pains referrible to those parts, this insidious disease should grow unheeded. He is strongly of opinion, that this first stage of "stony hardness" is recoverable from by rigid and long-continued antiphlogistic treatment; and at page 162 he mentions a case cured when in this condition, by repeated spontaneous hemorrhage from the uterus.

The plan of drawing blood immediately from the cervix and os uteri, by introducing leeches there enclosed in a tube is not encouraged by Dr. Waller: strangely enough, he thinks their application to the vulva and the os externum a "preferable method."

No doubt the latter mode is the easier of execution, as the former one requires the personal attention of a medical attendant, or of one trained to the art; but we think there can be no rational doubt which of the two is the more effective.

The treatment recommended in this stage of "scirrhus," besides the local abstraction of blood, consists of the usual palliative measures, which after being enumerated are thus disposed of.

"These, then, are the remedial means to be employed in scirrhus of the uterus; and we conclude our observations on the subject by imploring the reader not to imagine, because the disease is usually fatal, that therefore nothing can ever be effectually accomplished for the patient's relief. We confidently re-state

our conviction, that much may be effected *at the commencement*, not only in the way of palliation, but for the eventual arrest of its progress; the insurmountable difficulties so frequently met with being the result of delay, and this manifestly arising from the slight, and to the patient unimportant, symptoms which indicate its first and only curable stage," 166.

In the ulcerative stage of carcinoma, Dr. Waller, like every body else, has little to recommend, as then "all hopes of cure must be abandoned." He says, and says justly, that nothing but opium will deaden the agonizing pain of the miserable patient; and that the doses of the remedy are not to be regulated by counting the number of grains given, but by observing the effects it produces.

On the question of excision of the uterus, as a last resource, the author quotes Dr. Blundell's results of the four cases operated on by this accomplished obstetrician! he admits that they give no encouragement for future attempts, and in spite of M. Lisfranc, there are not many who hold a different opinion.

We cannot conclude this analysis of Dr. Waller's book without alluding to his total silence on the diagnostic signs derivable from the touch and the speculum. The latter instrument is only mentioned once in the whole book, and then only with a view of forbidding its employment on the score of indelicacy. We have always reprobated the indiscriminate use of it so disgustingly insisted on by some French writers; but there are cases in which it must be used, and as an aid to diagnosis, it ought at least to be mentioned as useful in a practical treatise on uterine diseases. The same may be said of manual examinations "per vaginam;" this mode is not open to the same amount of objection as the other, and the "practical treatise" of Dr. Waller would not have been the worse for a few practical remarks on this important and very difficult subject.

The six lithographic drawings which embellish the book present curious specimens of the diseases which they very cleverly illustrate.

TRAITÉ PHILOSOPHIQUE DE MÉDECINE PRATIQUE. Par A. N. Gendrin, D.M. Médecin de l'Hôpital de la Pitié. Tomes 2, Baillière, Paris, 1839.

"PHILOSOPHICAL TREATISE"—We are so little accustomed on this side of the Channel with authors styling themselves and their works *philosophes* and *philosophiques*, that we are always amused with the quiet and gentlemanly assurance of our lively neighbours in this respect.

The practice of late years has been so common with them, that the terms, we suppose, are really not intended to imply much more than the usual "most obedient," or "most humble," at the close of a business letter. We meet with *Traité Philosophique* in great abundance; M. Bouillaud recently published a *Philosophie Médicale*; there are not a few works on *Anatomie Philosophique*, and *Physiologie Philosophique*; and soon, doubt-

less, we shall have philosophical treatises on surgery and midwifery, and ultimately perhaps on separate diseases, so that ere long we may be called upon to notice some philosophical work on uterine hæmorrhage or stone in the bladder!

As far as we know, this foolish practice has prevailed chiefly among the medical authors of late years in France; the literary men seem to be aware of the universal distrust and dislike into which their *philosophe* predecessors of the revolutionary æra have fallen, to have any wish to resume the appellation.

That there are works in medical literature, to which the title of philosophical might be justly applied, we do not deny; but their authors had too much of the modesty of genuine science, to claim it for themselves or for their productions. Need we allude to the immortal writings of Hunter, Bichat, and Laennec? How far the present treatise of M. *Gendrin* may be considered by himself worthy of being associated with these, we cannot tell; but, without much prophetic presumption, we think that we may assure him that *when* they are forgotten, but not till then, his will have a fair chance of enduring renown.

This "Traité Philosophique" is announced to consist of four volumes; two only have as yet appeared. "It is to embrace and systematise all the parts of medicine which are specially applicable to the knowledge and treatment of diseases." After a few introductory observations, a great portion of which is far too recondite for us to understand, the author expounds his classification of diseases; dividing them into two great divisions—the first comprehending those maladies which consist in an alteration of the functions of Organic life; and the second, those which consist in the alteration of the functions of Animal life. These two divisions embrace nine classes. 1. Hæmorrhagiæ—2. Diacrisis or alterations of Secretion—3. Phlegmasiæ—4. Pyrexia, or Fevers—5. Anomalotropies, or alterations of nutrition—6. Heterosarcoses, or formations of Accidental Tissues—7. Cachexiæ—8. Neuroses—and, 9. Vesaniæ, or Mental Disorders. The first seven appertain to the functions of organic life, and the two last to those of animal life.

This nosological arrangement is in our opinion one of the most faulty which we have ever met with, and is liable to innumerable objections; as in one place it associates diseases which have little in common with each other, and, in another, it disjoins those which are practically and essentially very much alike. Most readers will be surprised to observe that the pyrexia are postponed to the hæmorrhagiæ, and to the phlegmasiæ—rather a strange fancy; seeing that fever is a necessary accompaniment of all the phlegmasiæ, and also of all active hæmorrhages. But we cannot stop to canvas the merits and demerits of M. *Gendrin's* system; we need only state that the whole of the first volume before us and more than one-half of the second are occupied with the description of the hæmorrhagiæ alone; commencing with epistaxis, and successively treating of hæmoptysis, gastro-entero-hæmorrhagia, hæmaturia, hæmorrhoids, hæmorrhage from the skin, then apoplexy, pneumo-hæmorrhagia, dysmenorrhœa, menorrhagia, and, lastly, uterine hæmorrhage during and after pregnancy.

Had our limits permitted, we intended to have made some remarks on the chapter upon the general description of hæmorrhage. It is very im-

perfect; especially as respects the most practical part of the subject, the treatment.

But indeed this might have been looked for; as the same defect may be predicated of almost every work on practical medicine which issues from the French press. It is truly astonishing how far behind their brethren, not only in England but also in Germany, the French physicians seem to be on every branch of therapeutics. For example, M. *Gendrin* seems scarcely to be aware of the utility of nauseants in arresting hæmorrhage; although they are unquestionably among the most powerful means that can be employed.

We believe that many physicians are deterred from the administration of these medicines by the fear of vomiting being induced, and of the hæmorrhage being thereby aggravated. This fear, we may assure them, is in almost every case groundless; we have repeatedly administered emetics of ipecacuan and the tartate of antimony in almost every form of hæmorrhage, including hæmoptysis, hæmatemesis, and menorrhagia, not only without danger, but generally with the most beneficial results. Vomiting has in general the effect not of increasing, but of decidedly arresting, discharges of blood. The nausea that precedes it has a most powerfully sedative effect on the actions of the heart, and on the whole circulation; and even the violent efforts of the stomach and respiratory muscles during the act are not observed to accelerate the force of the arterial circulation, but only to retard for a short time the return of the blood along the veins. The nausea should always be kept up for many hours subsequently, by the use of repeated small doses of the antimony.

Another important omission of M. *Gendrin* is that he does not even notice such remedies as the acetate of lead, or the sulphate of zinc or of alum in the treatment of hæmorrhages: he seems to think that the internal use of such remedies is almost entirely nugatory. In this, he is much mistaken. That the effect of these salts, when properly administered, is in many cases most speedily to arrest discharges of blood, cannot be disputed by any one who has fairly tried them. For example, we have repeatedly seen hæmaturia, chronic as a matter of course, checked by the use of alum in the course of a day or two; and many cases of menorrhagia, which had continued long, have very rapidly been cured by the administration of sulphate of zinc in the form of pills, associated with dilute sulphuric acid and the tincture of hyosciamus.* But we must stop in these strictures; and we shall now direct the attention of our readers to one really valuable chapter, at the commencement of M. *Gendrin's* second volume, on the *Physiology of Menstruation*. His observations on this topic are minute and satisfactory; and the conclusions which he draws from them—although they cannot be regarded as strictly original—seem to be quite legitimate, and withal are very interesting.

* These results cannot appear surprising, when we remember that many chemical salts are so rapidly absorbed into the system, and may be detected in the urine and other secretions within a very short time after being swallowed. The recent researches of M. *Orfila* on Poisons, wherein he has proved that the salts of arsenic, antimony and copper, may be detected, not only in the blood and urine, but even in the substance of the viscera and muscles, lead to many important deductions in practical therapeutics.

The most important of these conclusions is that in every instance of genuine menstruation there is a rupture of one of the Graafian vesicles on the surface of the ovary, and that this rupture is accompanied with a dilatation of the corresponding Fallopian tube, an approximation of its loose end to the ovary, the presence of a red-coloured mucus within the tube and the uterus, and the development of villousities, probably of a vascular nature, on the inner surface of the latter organ. According to this view, the catamenial discharge is not the primary or essential act in the curious function of menstruation: it is merely the evidence and effect of a change that has already taken place in one of the ovaries.

The reason, therefore, on the one hand, that menstruation does not occur before the age of puberty is, that up till this period no distinct vesicles are observed in the ovaria; and, on the other hand, that it ceases at what is called the critical age in women, is that these organs then become atrophied and otherwise altered in structure.

The following are the data observed by M. Genárin, and from which these interesting conclusions have been drawn.

A woman, 30 years of age, committed suicide by hanging herself, on the 8th of February, 1828, while the catamenia were upon her.

On dissection, the mucous surface of the vagina and cervix uteri was found highly injected; the uterus contained a sanguinolent mucus, and its internal surface, especially at the fundus, exhibited numerous fungiform villousities of a reddish grey colour, which were best seen under water. The right ovarium and Fallopian tube presented nothing unusual; but the left tube was found to be considerably dilated and to contain a reddish coloured mucus, which was most abundant at its open extremity. The ovary too on this side was observed to be highly injected at one point of its surface to the extent of a quarter of an inch; and, in the centre of this vascular spot, there was a distinct fissure or cleft of about a line and a half across, and provided with loose or fringed edges. This fissure led into a small cavity, which might receive a hemp-seed, and whose parietes were of a bright red colour: it was evidently a Graafian vesicle which had become ruptured. Four other vesicles, unbroken, and each of about the size of a hemp-seed, were found in the substance of the ovary.

In a second case, which was that of a girl 19 years of age, who died suddenly while menstruating, the appearances in the vagina and uterus were exactly similar to what we have noticed in the preceding case. "The Fallopian tubes were filled with a reddish mucus; the *morsus diaboli* of the right one was applied to its ovary, the surface of which exhibited a highly injected network of bloodvessels, and at one point a minute solution of continuity leading into a small cavity of about two lines in diameter. The vascular network on the surface of the ovary was most distinct and of the deepest colour for two or three lines around the fissure. Three vesicles, two as large as hempseeds and the other of the size of a pin's-head, were found in the substance of this ovary; the larger ones being nearest to its surface, and the smaller one most deep-seated. In the left ovary were observed, at varying depths, five vesicles, each of about the size of a millet-seed: no trace of any cicatrix on its surface was visible. The reddish mucus

contained in the canal and the *morsus* of the Fallopian tube was examined with a powerful magnifying-glass; but nothing like an organised body could be detected."

In a *third* case, which occurred in a woman, 27 years of age, who met with her death from a severe accident on the fourth day of menstruation, we are informed that "the right ovary exhibited two distinct but incomplete (*inachevées*) cicatriculæ—one depressed and umbilicated, and which presented the vestige of a minute central excavation; the other of a yellow hue, and underneath it there was an empty cavity or *loge* of a line and a half in diameter, and whose walls were of a yellowish-red colour. Two or three injected capillaries were seen on the surface of the ovary between these cicatriculæ. Five entire vesicles were found in the left, and only one in the right ovary."

In the *fourth* case, a girl 20 years of age died from pneumonia on the third day after the appearance of the catamenia, which had remained only twenty-four hours upon her.

The cavity of the uterus was occupied with semi-coagulated blood, but only colourless mucus was found in the Fallopian tubes. The right ovary exhibited a minute fissure, beneath which there was a dilated locular cavity of about two lines in diameter, whose edges were red and *tomentose* when examined under water: a narrow vascular areola surrounded the fissure. Only one Graafian vesicle was found in this ovary. The left one, which was unusually small, exhibited no traces either of a fissure or of any vesicles.

The *fifth* and last case, reported by M. *Gendrin*, is that of a woman, 44 years of age, and mother of three children, who died from apoplexy on the second day after the appearance of the catamenia, which had been always quite regular, and lasted on most occasions for three days.

"The uterus and vagina contained semi-coagulated blood; numerous vascular villosities were seen on the internal surface of the former. The left tube was dilated and full of reddish mucus; its *morsus* was applied to the ovary, on the surface of which was observed a fissure leading into a minute excavation which was filled with a similar fluid. This *locule*, examined under water, seemed to be about a line in depth; it formed the centre of a vascular areola on the surface of the ovary of four or five lines in diameter. Three vesicles were formed in the substance of this ovary. The other one exhibited no appearance of any fissure, and only two vesicles were found in it."

M. *Gendrin* informs us that he has made numerous examinations of the ovaries in young girls before the age of puberty, and that on no occasion has he ever found any appearances similar to those which we have now described. In three cases only has he observed any vesicles: the girls were above 12 years of age, but had not menstruated, and presented none of the outward appearances of puberty. In these three cases the ovaries, only very partially developed, were found to contain from one to four minute vesicles of the size of small pins'-heads, and which were deeply imbedded in their substance.

M. *Gendrin* next describes the progressive changes in the structure of the Fallopian tubes and ovaries in women after the cessation of the catamenia,

remarking that, "anatomists are agreed as to the absence of the Graafian vesicles in those who have passed the critical period of life;" and he sums up the results of his examinations of the ovaries in menstruating women in the following words:—

"Dissection has repeatedly verified in them the presence of vesicles in the ovaries, (the larger ones being always nearest to the surface,) and the existence of cicatriculæ on their surface in different states of development—from the red vascular cicatriculæ, exhibiting an irregular central depression, to that which is evident only from having a yellowish hue and a slight loss of smoothness and polish of the ovarian surface. Whenever the women have had their catamenia at from one to several weeks before death, I have uniformly found that the cicatricula was most recent and most vascular in those who had most recently menstruated.

In some women, whose catamenia have been interrupted for several months, no vesicles are found in the ovaries, and we cannot discover any trace of cicatriculæ: generally, however, under such circumstances, we observe very small and deeply-seated vesicles. Occasionally we observe, imbedded in the substance of the ovaries, cells filled with a brownish-yellow sanies-like matter, resembling a small coagulum partially softened and discoloured."

The inference drawn by our author from the preceding observations is, that the function of menstruation is essentially and necessarily connected with, nay rather dependent upon, the development, maturation, and rupture of the peculiar vesicles formed in the ovaries,* and that the immediate cause of the secretion is the plethoric condition of the uterus thereby induced, and the manifestation of vascular villosities on its inner surface.

John Hunter had long ago remarked the *hyperæmic* state of the uterus, and the tendency to exudation of blood on its surface, in women who had died during menstruation; but it was *Joerg* who first described in these cases the vascular-like villosities to which we have so frequently alluded. But neither of these distinguished writers seems to have been aware that the phenomena were necessarily associated with the rupture of an ovarian vesicle and the destruction of an ovum arrived at maturity.

Such is a summary of the very interesting observations of *M. Gendrin* on menstruation. It is but due, however, to other authors to observe that these observations are not entirely novel and original. One English writer in particular, and he of no mean note on every subject of uterine pathology—*Dr. Robert Lee*—has unquestionably preceded him, at least in point of publication.

It is indeed rather strange that no reference should be made by *M. Gendrin* to the valuable paper by *Dr. Lee* in the *Cyclopædia of Medicine*, as we have a right to expect that the translator of two of our standard works, *Thomson* on *Inflammation*, and *Abercrombie* on *Diseases of the Brain*, should be tolerably well acquainted with British medical literature. But the ignorance on the part of French writers of any literature save their own is so prevailing, that we are unwilling to suspect *M. Gendrin* of any want of good faith on the present occasion, and we attribute his omissions rather to neg-

* The appearance of cicatriculæ on the surface of the ovaries must therefore, according to this view, be regarded only as a sign of menstruation, and not necessarily of conception, having ever taken place, as has been so long imagined.

lect than to dishonesty. Unquenchable vanity is the besetting sin of the French people; it pervades their every action, whether in war and politics, or in the more peaceful domains of literature and science. Nowhere is it more conspicuous than in the writings of their medical men. At almost every meeting of the Academy of Medicine in Paris, we find that controversies are carried on upon various topics, which to the learned members seem to have all the interest of novelty, but which are known to every pupil of every respectable school in this country. For example, there was a most elaborate discussion last year on the treatment of fever with purgatives, and many of the members talked of the importance of this discovery!—seemingly not at all aware of Dr. Hamilton's admirable work published nearly half a century ago. It may therefore be unfair to suppose that M. Gendrin was aware of Dr. Lee's paper, and that the omission of any reference to it was wilful; but surely the author of a "*Traité Philosophique*" should make himself acquainted with the works of the more distinguished writers of former and present times. Waving however the question as to priority of discovery, we may remark that the circumstance of more than one writer unaware probably at the time of each other's researches, having come to the same conclusions as to the physiology of menstruation, must be regarded as a strong argument in favour of their accuracy. As the subject is one not only of great curiosity but of practical importance, we shall devote a page or two to a brief exposition of the observations contained in Dr. Lee's interesting paper.

After mentioning several circumstances which very clearly point out the intimate connexion between the function of menstruation and the condition of the ovaries—as for example the non-appearance of the catamenia in women in whom the ovaria have been found on dissection to be wanting, and their utter cessation in the remarkable case where Mr. Pott extirpated the organ in an operation for hernia; also the regular recurrence of periodic pains through the pelvis, similar in every respect to those which often attend menstruation, in certain cases where the uterus has been afterwards found to be either entirely absent or only imperfectly developed—and alluding to the curious changes which are known to occur in hen birds in which the ovaria have become shrivelled from disease, he proceeds to detail some very interesting observations which he has made on the anatomical appearances of the ovaria in women, who have died while the catamenia were upon them. The first seem to have been made in March 1831,* in the case of a young woman who died, while menstruating, from phlebitis.

..... "The left ovarium was larger than the right, and at one point a small circular opening with thin irregular edges was observed in its peritoneal coat, which led to a cavity of no great depth in the ovarium. Around the opening, to the extent of three or four lines, the surface of the ovarium was of a bright red colour, and considerably elevated above the surrounding part of the peritoneal coat. On cutting into the ovarium, its substance around the opening and depression was vascular, and several *Graafian* vesicles of different sizes were observed. The right ovarium was in the ordinary state. Both Fallopian tubes

* It is but fair to M. Gendrin to remind the reader that the first of his observations is dated in the year 1828: the dates of his other cases are not given.

were intensely red and swollen and their cavities were filled with menstrual fluid. The lining membrane of the uterus was coated with the same fluid, and the parietes were soft and vascular."

Nothing can be more satisfactory than these details; and while they anticipate in the date of publication, they beautifully confirm the observations of *M. Gendrin*. There is one circumstance in the case now mentioned that deserves notice; the right Fallopian tube contained menstrual fluid, although there was no appearance of rupture on the surface of its ovary. Was this owing to a consentaneous action of the two tubes? However this may be, we find that again, in *Dr. Lee's second case*, "the free extremities of the Fallopian tubes were gorged with blood, and their cavities were filled with a red-coloured fluid," although the right ovary only exhibited the appearance of a recent fissure or laceration on its surface. In a subsequent case, the details of which are minutely given by the author, and where the opening was found in the left ovary, menstrual fluid was present in the left tube only, although "both tubes were red and gorged."

The inference of *M. Gendrin* that the development and maturation, so to speak, of the Graafian vesicles is in proportion to their proximity to the peritoneal coat of the ovary, *seems* to be confirmed by the following observation of *Dr. Lee* in the case of a woman who died from cholera, while menstruating.

"The ovarium," he says, "was much larger than natural, and at one point there was a small irregular aperture in its peritoneal coat, through which a portion of a slender coagulum of blood was suspended. On cutting into the substance of the ovarium, it was found to be occupied by three small cavities or cysts, one of which was filled with a clear ropy fluid, another with semifluid blood, and the third, which communicated with the opening in the peritoneal coat, with a firm coagulum."

Dr. Lee closes his interesting observations with the following wise-cautious words:—

"The facts which have now been related render it extremely probable that all the phenomena of menstruation depend upon, or are connected with, some peculiar changes in the Graafian vesicles, in consequence of which an opening is formed in their peritoneal and proper coats. Whether an entire vesicle, or only the fluid it contains, escapes through this opening at the period of menstruation, further observations may hereafter determine."*

He appends a useful practical hint:—

"In many cases of disordered menstruation, chlorosis, and hysteria which we have observed, the symptoms have been clearly referable to certain morbid

* *Dr. Lee*, it should be mentioned, does not claim to himself the originality of these views. He most candidly admits that, as far back as the year 1797, *Mr. Cruikshanks* has distinctly recorded that, in the case of a young woman who died with the menses upon her—"the external membranes of the ovary were burst at one place, from whence I suspect an ovum escaped, descended through the tube to the uterus, and was washed off by the menstrual blood." In reference to the latter part of this statement *Dr. Lee* remarks, that "there is no proof whatever that an ovum passes along the Fallopian tube into the uterus during menstruation, and it is not clearly established that this takes place even subsequent to conception."

states of the uterine appendages, and decided benefit has resulted from the application of those local remedies which were employed with the view of subduing the irritation, congestion, or inflammation which appeared to be present in those parts of the uterine system."

From the extracts which we have given from Dr. Lee's paper, the reader must see how perfectly his observations coincide with those of M. Gendrin. Their accuracy is further confirmed by the researches of Dr. Negrier of Angers, who has recently published a small work, entitled "*Recherches Anatomiques et Physiologiques sur les Ovaires dans l'Espece Humaine, considérées spécialement sous le rapport de leur Influence dans la Menstruation, p. 130, avec 11 planches lithographiées.*" Professor Negrier claims for himself the priority of the discovery, as he has been in the habit, he tells us, of describing in his lectures for the last nine or ten years the dependence of the catamenial secretion upon certain changes in the ovaries. We are not however aware that he ever published his views till last year. The following is a summary of his work, for which we are indebted to the pages of the *Gazette Medicale*.

The ovarian vesicles in mammiferous animals were usually regarded as representing the ovum in the greater number of animals of other classes, until the period when MM. Prevost and Dumas discovered, in two cases, the ovulum in the interior of the vesicle. The former opinion was not however wholly abandoned till after the researches of Baer, who pointed out the precise spot where the ovulum is observed within the vesicle, and described it very exactly. The subsequent labours of Coste, and also of Valentin and Bernhard, have carried us a step further in our knowledge, by determining the situation of the proligerous vesicle at one point of the ovulum, where it is so extremely minute that it does not exceed 376 ten-thousandth parts (376 dix milliemes) of a line in dimensions.

According to the opinion hitherto generally entertained, the Graafian vesicles are slowly developed in the substance of the ovary, until the moment of conception, when one of them gives exit to an ovulum, which is then conveyed along the Fallopian tube into the cavity of the uterus: the cicatrix, thereby left at the point of rupture, assuming a yellowish appearance, and well known under the name of *corpus luteum*. Great attention has been paid by many pathologists to the characteristic features of these yellow spots, which when distinctly marked have usually been regarded as a certain proof that the woman has at some time or another conceived. The most satisfactory description of the genuine *corpora lutea* will be found in Dr. Montgomery's excellent work on the Signs of Pregnancy, and in Dr. Robert Lee's valuable paper in the 22nd vol. of the *Medico-Chirurgical Transactions*.

In the first chapter of his work, Dr. Negrier describes the gradual and successive development of the ovaria from the earliest periods of life up to puberty; and in the second, the changes which these organs undergo at the first appearance of the catamenia, and during the whole period of fecundity.

From the facts narrated in this latter chapter, it would seem that, at certain epochs, an afflux of transparent fluid takes place into the cavity of the most superficial vesicle; this becomes in consequence distended, and at length gives way at the point where the investing parietes of the ovarium

are thinnest and most yielding. The ruptured point is usually quite cicatrised, at least outwardly on the peritoneal surface of the ovary, in the course of from eight to ten days. The rupture of the vesicle is followed by a slight effusion of blood in its interior from the minute vessels, which have given way. This seems to be very quickly absorbed; as the little cavity is sometimes found empty, and communicating with the peritoneum. The cicatrix subsequently assumes a yellow appearance, which remains for some time. Now these appearances, Dr. Negrier says, are never observed when the catamenial secretion is suspended, as for example, during pregnancy and lactation, or when it has completely ceased, after what has been called the critical epoch of life in women. The conclusion which he draws from his researches is, that the evolution and rupture of the Graafian vesicles is the cause of menstruation, and that all the symptoms of this important function are attributable to the changes that are successively going on in the ovaries, and to the sympathetic irritation in the uterus which is thereby induced. After alluding to the circumstance that, if the uterus of a woman during the act of menstruation be examined, we always observe that the sanguineous congestion of its substance is uniformly more decided on the side corresponding with that ovary in which one of the Graafian vesicles is ruptured, and especially around the opening of the Fallopian tube of that side, Dr. Negrier remarks, "From an extended series of observations, I feel confident in stating, as an indubitable fact, that *in the ovaries of women who have menstruated, of whatever age they may be, vesicular cicatrices never fail to be found.* The catamenial secretion is so completely dependent on the functions of the ovary that, if this organ is not duly developed, it is always retarded; and, if on dissection we find the abortive formation of some vesicles, we may be certain that the returns of the catamenia have been of late irregular and interrupted. Again, if we examine the ovaries of girls, in whom the appearance of the secretion has been precocious, we shall find them more than usually developed, and in every respect like what we observe in women of a marriageable period of life. On the contrary, in those in whom menstruation is tardy and difficult, the ovaries are found to be small, and their parenchyma to exhibit only traces of vesicular evolutions imperfectly developed." At the critical period of life, it is rare that the catamenial secretion ceases all at once; usually its returns are for a period irregular, and the quantity of the discharge varies much, being at one time very scanty, and at another time very profuse. Now the examination of the ovaries at this period of life exhibits corresponding irregularities in the development of the Graafian vesicles: some have evidently aborted before their maturity, and have either remained in the state of grey pouches or cells, (*bourses grises*) or look like yellow vesicles.

We may conclude from this circumstance that the incomplete development has not been sufficient to induce a full re-action in the uterus; and hence is the imperfection and irregularity of the secretion. However, if some of the vesicles attain a complete maturity, the development is tardily effected, and may thus induce that state of plethoric engorgement which causes those profuse hæmorrhages, so frequent towards the close of the menstrual function. One of the cases reported by Dr. Negrier seems to afford strong presumption of the truth of his opinions.

It was that of an unmarried woman, 50 years of age, in whom the hymen

was quite entire, and in whom the catamenia had ceased for about three years before death: the ovaries were found on dissection of the size of almonds, and their surfaces were entirely covered with cicatrices, like deep grooves or furrows; one of them exhibited a small nucleus of the colour and hardness of baked earth.

Having thus occupied so much of the present article with these recently published opinions and observations on the physiology of menstruation, we cannot now spare above a page or two to the notice of some of the other contents of M. Gendrin's volumes, which otherwise might have detained us longer.

We have already said that the whole of the first volume, and more than one-half of the second are occupied with a description of the hæmorrhagiæ. We select what the author says of the least common form of hæmorrhagic disease—*Hæmatidrosis*, or exudation of blood from the skin. The chapter on this subject is more complete than any we have met with elsewhere: and, as the disease is seldom treated of in systematic works, we shall give our readers a short account of the most interesting cases collected together by M. Gendrin.

Case 1.—A girl, eleven years of age, was seized with a sharp pain in the right arm, which soon became covered with numerous pustules. A few days afterwards blood was observed to ooze from their surface; and then they all disappeared without leaving any marks. The next month the same symptoms returned, and these were quickly followed by the first appearance of the catamenia. The following month, there was a similar return of these phenomena, and in the same succession. For some time afterwards there was no re-appearance of the hæmorrhage from the arm; but during the following winter, whenever the fingers of the right hand became very cold, blood oozed from their tips, although there was not the slightest trace of any crack or wound in the skin. By merely warming the hand, the oozing was stopped, and, as spring approached, this curious tendency to hæmorrhage ceased altogether. For four months the catamenia returned regularly; but then they ceased. Again the oozing of blood from the right fingers returned, sometimes every or every second day, and at other times only every eight days. It was impossible to detect any orifice from which it flowed. Some time after this date, the girl was seized with vertigo, flushing of the face, tumefaction of the neck, &c. These symptoms were succeeded and relieved by an oozing of blood from several points on the front of the neck. At another time, epistaxis came on, which did not cease until again the neck began to swell, and the oozing of blood from its surface to return. On the same day a bloody fluid exuded from the skin of the right arm, and from the calf of the left leg. At this period the catamenia had been absent for several months, and the girl was subject to a variety of sufferings, such as cramps, partial paralysis, &c.

On one occasion, the left eye became amaurotic, and the tears from this eye were sanguinolent. On another occasion, the skin of the nose exuded blood, and this was followed first by epistaxis, and then by hæmoptysis. Subsequently there was an oozing from under the nails of the right hand, and from the skin of the right arm: and this, some time afterwards, was

followed by a trifling hæmorrhage from the left eye, and the skin of the right hand.*

A curious case is related by Dr. *Boivin* in the *Dictionnaire des Sciences Med.* t. iv.

A middle-aged woman, after a blow on the stomach, was attacked with hæmatemesis. For fifteen years, the hæmorrhage returned at shorter, or longer intervals. At length it ceased, after the administration of some powerful astringent medicines. But now ensued an exudation of blood from various parts of the surface of the body and limbs;—from the front of the chest, the back, the thighs, legs, feet, and toes. The catamenia at this period were quite regular in their return. While this cutaneous exudation continued the woman felt well; but she was immediately affected with various distressing feelings when it ceased. A pruritus in the part usually preceded the oozing from the skin. The woman was 48 years of age when Dr. *Boivin* saw her, and it was then nearly three years since the first appearance of this singular cutaneous discharge. The catamenia had ceased for about two years, but the cessation of these had not affected the recurrence of the Hæmatidrosis. It was chiefly from the scalp, the upper part of the chin, and from about the angles of the jaw, that the oozing took place, when this gentleman wrote. Twice during the day the patient felt a sense of heat and an itchiness in these parts; the skin became then somewhat swollen, and blood oozed from its pores in large drops. The health of the patient seemed entirely good.

In the same work is narrated the case of a middle-aged man, whose constitution had been much enfeebled by intense study and mental distress, and in whom, after a sexual debauch, the thighs, axillæ, pubis, and particularly the penis itself, became excessively painful. From all these parts, especially from the glans, blood oozed out in a stream. This hæmorrhage returned every fortnight or three weeks for the next 20 months, and usually lasted for two or three days at a time. The issue of the case is not given.

The next case occurred in a man 28 years of age. One evening he had drunk wine to excess, and had remained all the following night in a state of intoxication: he had vomited several times. Next morning, after a violent fit of rage, he felt a dull pain, accompanied with pruritus, on the left side of the chest near the armpit. On applying his hand to the part, he was surprised to find it covered with blood. He went immediately to the Hôpital de la Pitié, and we (*M. Gendrin* ?) found that the blood was flowing in drops from the surface of the left armpit and the adjoining part of the chest. When wiped clean, the skin was observed to be slightly swollen and red. The drops of blood formed slowly; they were almost confluent, and soon joined together. This cutaneous hæmorrhage continued the whole day; so that the quantity of blood lost amounted, it was believed, to three pounds. There was no fulness of the pulse, nor any disturbance of the general health. Next day, the hæmorrhage had ceased, and the man seemed quite well.

Occasionally this form of hæmorrhage, Hæmatidrosis, is observed in young

* *Van Swieten*, Comment. in *Boerhaave*, Aphor. t. iv.

infants. The following case is reported by M. Eggerdes. An infant, three weeks old, had become very much emaciated, when one morning the sleeve of its shirt was found spotted with blood, although no trace of any wound or injury could be seen. The child seemed better, and sucked with more strength than it had done before. Next day, the right arm was found covered with blood. This sanguineous exhalation continued for the following five or six days; and each day the child's health seemed to be improved. The left arm then became the seat of a similar hæmorrhage, which continued for a few days: ultimately the little patient recovered perfectly.

As illustrative of the occasional causes of sanguineous exsudation, we may mention that *Leroux* alludes to the case of a man, employed at the porcelain manufactory at Sevres, whose perspiration became quite sanguinolent whenever he exposed himself to the heat of the furnace. Violent muscular exercise will sometimes produce the same effects. *Latour* tells us of a man in whom fencing brought on an exsudation of blood from the surface of the body; and in the *Ephemerides Nat. Cur.* we read the case of a young girl, who, after excessive dancing, was similarly affected. Strong mental impressions have been known to act in the same way. (The record by the Evangelist of the Agony in the Garden, that "He sweat, as it were, great drops of blood," may have been literally true.) Excessive pain also will give rise to this curious disease. Thus Dr. *Caizergues* has related the instance of a woman, in whom, while suffering under severe nephritis, drops of blood oozed from the skin of the face and of various parts of the body. The most frequent cause however of Hæmatidrosis is certainly suppression of the catamenia. In the majority of cases, the hæmorrhage has been more or less distinctly periodic, and has gradually ceased, when the menstrual function was restored to a healthy state. The disease does not require any specific course of treatment. Its cause should, as a matter of course, be first ascertained, and, by removing it and bringing the general system into a healthy state, the cutaneous hæmorrhage will gradually subside, and ultimately disappear.

From the extracts which we have given from M. *Gendrin's* work, it will be perceived that it is by no means destitute of valuable information. As a whole, it does not please us; in parts, it is excellent.

TRAITÉ CLINIQUE DU RHEUMATISME ARTICULAIRE, &c. Par
J. Bouillaud. Octavo, pp. 554. Paris 1840. J. B. Baillière.

ALTHOUGH the previous work of M. *Bouillaud*, of which the present one may be considered as only an enlarged and amended edition, was reviewed at considerable length a few years ago in this Journal, our practical readers will probably not deem a few pages needlessly occupied if we again call their attention to the subject of Rheumatism—one of the most common, and yet one of the least thoroughly understood, ills that man's flesh is heir to. This assertion may be considered by some to be somewhat hasty and inac-

curate; but if we consider for a moment the discrepancy of treatment recommended by many of the ablest physicians of the present day, not to allude to those of former times, it will be admitted that it is not so groundless as at first view may be supposed. And can we wonder that the treatment of any disease should be so undecided and fluctuating, when we call to mind that its pathology—or proximate cause, to use the language of our forefathers—is so little understood? In what other malady, except perhaps in typhus fever and neuralgia, has the treatment been more empiric and unsteady? While one physician recommends bleeding, mercury, and other antiphlogistics, another trusts chiefly to colchicum or guaiacum, and a third assures us that cinchona may be regarded as almost a specific. Surely it cannot, we might suppose, be in one and the same malady that remedies, so essentially different, are found to be equally, or nearly equally useful; unless indeed the character or type of rheumatism, like that of typhus, varies in different seasons, and is subject to the operations of the medical constitution of the air, the state of health of the patient, &c.—influences which it is unquestionably necessary to attend to in the study and treatment of all manner of fevers. But few, we believe, will be inclined to adopt this opinion; and yet it must be acknowledged that such is but a fair inference from the conflicting statements of medical men, in reference to the most successful mode of treating rheumatism. As this is a subject which has occupied much of our attention for several years past, it is possible that we may succeed in throwing a little light upon the difficulties which surround it, and that we may reconcile, at least in part, the striking differences of opinion entertained by different writers. Even although we may not get others to agree with us, the exposition of our own views will probably excite others to canvass more attentively the question at issue; and thus the cause of truth and of sound medical practice cannot fail to be essentially promoted. As it is not however our purpose to write an essay upon rheumatism, but to review briefly M. Bouillaud's new work, we shall only append our remarks in the way of commentary on the leading positions which he so energetically strives to enforce. These are the following:—

1. That acute, or as he prefers to call it, articular Rheumatism or Arthritis is invariably and essentially an inflammatory disease; that the inflammation has nothing specific in its nature, and that it is liable, like other forms of phlegmonous disease, to terminate in resolution, the effusion of lymph, suppuration, and ulceration.

2. That the primary seat of the inflammation is in all cases the synovial membrane of the joints, the other tissues of the joints and limbs being only secondarily affected.

3. That in almost every case of acute rheumatism, there is a *coexistent* inflammation of the lining membranes of the heart, or, in other words, pericarditis and endocarditis.

4. That acute rheumatism should be treated, as all the other active Phlegmasiæ, by vigorous depletions of blood and the use of other antiphlogistic remedies; and that, by adopting his *nouvelle formule* of bleeding *coup sur coup*, the disease may generally be cured in from one to two weeks.

Before offering any comments on these positions, it is proper to observe that M. Bouillaud's work does not profess to be a complete treatise on rheumatism; it is limited almost entirely to the consideration of the *acute*

form of the disease, or to what is frequently denominated, both in France and England, rheumatic fever. In this respect the work is very incomplete—as it takes only a partial view of the disease, and thus neither does justice to the subject, nor fairly enables the reader to form any conjecture in what light the author regards those very numerous cases, generally of a *chronic* nature, which are classed together, in ordinary language, under the generic term of rheumatic.

But M. *Bouilland*, it is well known, is one of those impetuous vehement characters, who seize upon a favorite opinion, and invariably carry it à l'outrance. He may be truly called a man of a single idea in the practice of medicine; his mind is ever occupied with the idea of inflammation, and his treatment of almost every disease seems to consist in bleeding, bleeding, bleeding. Whoever is in the habit of perusing the French periodicals of late years, knows how largely he has contributed by his clinical reports to the diffusion of the Broussaian doctrines: and being a quick and vivacious writer, he has acquired a notable reputation among the ardent spirits of *La jeune France medicale*.

The disease, Rheumatism, conveys no other idea to his mind than the existence of a phlegmonous inflammation in certain tissues of the body; and its treatment therefore, according to this view, requires nothing but the usual antiphlogistic remedies. He seems to be not at all aware that there may be different *kinds*, so to speak, as well as different *degrees* of inflammatory action; and yet every reasonable writer, if he has been long conversant with clinical practice, must admit the truth of this statement. Is there not the phlegmonous, the scrofulous, the syphilitic, the rheumatic, and the gouty inflammation? The essential or *generic* nature of these various forms of the disease may be the same; probably it is; viz.—an obstructed state of the capillaries of the inflamed part, and an increased action of the larger arteries leading to it. But each form has its specific peculiarities, by which it differs from all the rest—peculiarities which depend upon the differences, whether congenital or acquired, of the constitution of the patient, or, in other words, on the state of the fluids and solids of the body.

Phlegmonous inflammation, as every one knows, has a marked tendency to terminate in suppuration: so likewise has the *scrofulous* inflammation, although the suppurative action which follows it has many peculiar features.

On the other hand, the tendency of *syphilitic* inflammation is to induce a peculiar ulceration, accompanied with imperfect suppuration; while the characteristic termination of the *rheumatic* inflammation is unquestionably the effusion of coagulable lymph, and that of the *gouty* inflammation is the deposition of lithic acid either around the joints or in the urinary passages. Such is the usual course of these different kinds of inflammatory action; but as there is no medical law without numerous exceptions, and as diseases are seldom uncomplicated and simple in their nature, we may *à priori* be assured that in numerous cases an existing inflammation will partake of the characters of more than one of these forms.

Thus the *scrofulous* inflammation sometimes approximates very closely to the phlegmonous; or it may be blended with the syphilitic, giving rise, as every one knows, to a very unmanageable form of disease. Again, the *rheumatic* inflammation seems sometimes to differ little from the phlegmo-

nous in the consequences which it produces, being then followed by the partial formation of purulent matter; and at other times—and this is much more frequently the case—it is co-existent with gouty disease, and then it constitutes what is usually called *rheumatic gout*.

Let us now see whether we can form any reasonable conjectures as to the cause and nature of the specific differences in these different kinds of inflammatory action.

To arrive at any accurate conclusions on this very interesting and most important subject, more attention must be given to the state of the blood, and of the secretions from it, during the progress of disease than has hitherto been done. Physicians in all countries are beginning to be more and more impressed with the necessity of admitting a *regenerated* system of Humoral Pathology; the *solidism* of the schools during the present century has been pushed to an extravagant length, and begins to share the fate of every other exclusive dogma in medicine.

Consider for a moment the condition of the blood in *genuine* rheumatic inflammation. Is it not charged with an excessive and a most abnormal quantity of fibrine or coagulable lymph? On the other hand, is not the blood, which is drawn from patients labouring under *scrofulous* inflammations, usually thin and watery, with an excess of serum and a deficiency of clot?* In these two kinds of inflammation, we find the *extremes* of richness and poverty in the circulating fluids; phlegmonous inflammation being, in this respect, *intermediate* between the two.

That the peculiarities of syphilitic inflammation may be attributed to the existence of a specific poison in the blood, will not be denied by any one; although we must confess that as yet we do not at all understand how this operates, or whether it produces any appreciable changes in the fluids; and it seems equally obvious that those of gouty inflammation are intimately dependent upon the presence of an unusual quantity of acid in the circulating mass; as may fairly be deduced from the chemical condition of the urine and other secretions, and the acknowledged efficacy of alkaline medicines in the cure of the disease.

As our chief object at the present moment is to endeavour to explain the phenomena of Rheumatism—*chronic* as well as *acute*—we crave our readers' especial attention to the peculiarities of the blood in the genuine rheumatic and the genuine gouty inflammations—in the one, the blood being charged with an excess of its fibrinous portion, in the other being, so to speak, impregnated or poisoned with an acid matter.

An important question is, How are these morbid states induced? A good deal of error prevails upon this subject.

It is a common opinion, that attacks of acute rheumatism are often sudden and unpreceded by any premonitory symptoms. We believe that this is quite a mistake. If the history of any case of this disease be attentively

* In estimating the proportion of the serum and the clot, we must not be guided by the simple inspection of the blood, after it has coagulated; as the clot in thin watery blood often seems to be of large size, in consequence of its retaining a quantity of the serum within it. Its firmness and resistance to the finger should always be attended to.

enquired into, it will be always found that for several weeks, or even months, previous to the seizure, the patient has been affected not only with flying pains in several of the joints, but also with headache, with vertigo and flushing of the face, not unfrequently with cough and sense of tightness about the chest, and with a general feverish state of the system, denoted by thirst and disturbed sleep, a constipated state of the bowels, and a scanty secretion of urine, which is moreover deep-coloured and of an unusually strong smell. The digestive organs do not ordinarily suffer; hence the appetite remains tolerably good, and the patient continues to live on a full diet, taking animal food once or twice daily, and drinking his beer or wine as usual. Although he feels himself not quite well, he is not *malade* enough to be confined to the house, and he therefore strives to shake off his symptoms of *malaise*, either by living more freely or by taking more than his usual exercise. Now during all this time the blood is becoming richer and more fibrinous, in consequence of the secretions being diminished; while the quantity of chyle, that is introduced into it, is as large as ever. Were the patient at this time bled, put on a low diet, and well purged, he would speedily be relieved of all his unpleasant symptoms, and spared, in all probability, the attack which is awaiting him.

But this is not done; and things go on as before, till, being exposed to wet and cold, he is seized with smart fever, and all the well-known symptoms of rheumatic fever make their appearance. The attack may seem to be sudden and unexpected; but, on further enquiry, the physician will always find that the patient has been far from well for several weeks previously. Indeed the very circumstance of the blood having acquired such an abnormal quantity of fibrine—which, be it remembered, is the very constituent of the blood which is most slowly augmented—might lead the pathologist, independently of the other phenomena of rheumatism, to the belief that the development of the genuine disease can not be effected in the course of a day or two, as may unquestionably be the case with certain of the *regular* phlegmonous inflammations, such as bronchitis, cynanche, &c. It is quite true that a patient, who was going about yesterday, may be confined to-day with severe rheumatic fever, in consequence of exposure on the preceding evening to cold damp weather;—but then the train was already laid, and it only required the spark to be applied to occasion the explosion of the disease. In many cases, an explosion never takes place; and then the patient continues to be harassed more and more with flying erratic pains, alternately better and worse with every fluctuation of the weather, while some internal organic lesion is most probably establishing itself. We are convinced that many of the most formidable changes of structure in the viscera, more especially in the organs of circulation and of the brain, are owing to this *rheumatic diathesis*—the hæmitis or inflammation of the blood of M. Piorry and other writers. Every physician knows how intimate is the connexion between rheumatism and organic diseases of the heart, and yet no satisfactory explanation has been given of this remarkable connexion. M. Bouillaud indeed talks much of the strict analogy of character in the tissues of the heart and of the joints, and he goes so far as to call the pericardium a sort of *synovial capsule*! But this analogy is much more in his words than in the thing itself. It has frequently occurred to us that we may solve the question, if we reflect that the blood in rheumatism is charged with an excess of

fibrine, and that it must therefore have a stronger tendency, than in health, to the deposition of coagulable lymph on the inner surface and on the valves of the heart's cavities. M. Bouillaud asserts, and he is quite right, we believe, in his assertion, that the pericarditis and endo-carditis, which so frequently complicate the presence of acute rheumatism, are co-existent with, and not subsequent to, the affection of the joints—in other words, that there is not so much a *metastasis* as a *coincidence* of the two diseases: now this is just what we might have expected, seeing that both seem to be connected with the same condition of the circulating fluids.

..... So much for what is, in our opinion, the primary or proximate cause of genuine and uncomplicated rheumatic inflammation—an inflammation whose essential *humoral* character is an excessive predominance of fibrine in the blood. But then the genuine unadulterated disease is probably rarely met with, except in young healthy subjects, who are affected for the first or second time with acute rheumatism. Whenever the disease has recurred frequently, or has been of long duration and has already become chronic, and especially if this occurs in adult age, it is almost always complicated either with Gouty inflammation, or with some form of Neuralgia. It is this complication of different morbid states that will be found to constitute the true character of numerous cases of Chronic Rheumatism, and attention to which will explain the reason of their extreme inveteracy, and their obstinate resistance to remedial treatment. The blood either is, or has been, (and in this latter case, the ligaments of the joints, and the fasciæ, &c. have already become thickened and otherwise altered in texture), surcharged with fibrine; in addition to this state, there may be a greater or less predominance of acid in the system; and lastly there may be superadded, at the same time, some form or another of neuralgic suffering. To prove the existence of the gouty disease, we have only to test the urine with litmus paper, which will be more deeply reddened than in health; and with respect to that of neuralgia—since we know little or nothing of the state of the nerves on which it depends—we may fairly appeal to the excellent effects, in numerous cases of chronic rheumatism, of those very remedies which are known so often to relieve all painful affections of the nerves—such as sedatives, bark, arsenic, &c.

The appellation of Rheumatic Gout therefore—gouty rheumatism would be a more appropriate term—to many cases is, we believe, strictly correct; the elements of both diseases being co-existent in the constitution of the blood at the same time, and the successful treatment depending upon a due attention being paid to the removal of this complication. In other cases, neuralgic sufferings are associated with the rheumatic pains; the peculiarities of each case under this head varying according as the one or the other predominate. There is always reason to suspect this latter complication, when the pains are exceedingly sharp and darting, but remittent, when their severity is much influenced by the condition of the weather, and when temporary relief is derived from the use of stimulant sudorifics and sedatives.

Lastly, all the three morbid states—the rheumatic, the gouty, and the neuralgic—may be co-existent in the same case; and according as one or other of these states prevails, so will the case be found to exhibit more of a rheumatic, or of a gouty, or of a neuralgic character. The discriminating

features of this double complication it is scarcely necessary to allude to, as they may be easily inferred from what we have already said.

By attending to these simple suggestions, the practitioner will often be enabled to accommodate his remedies to the peculiarities of each case; but, as we shall recur to this subject when we come to describe the treatment of rheumatism, we shall drop it for the present, and proceed to offer a few comments on the four positions, which embody the substance of *M. Bouillaud's* treatise.

The *first* of these—that acute rheumatism is simply a phlegmonous inflammation of the synovial capsules and of the other appendages of the joints, and that like other phlegmonous inflammations it may terminate in suppuration and ulceration—is not strictly correct. We have already pointed out what seem to us to be the peculiarities of rheumatic inflammation; and with respect to the latter part of the position, that it is liable to terminate in suppuration, we need scarcely remind the reader that this is only of occasional and of very rare occurrence. *M. Bouillaud* indeed has published the reports of no fewer than between thirty and forty cases of, what he considers, genuine rheumatism terminating in suppuration. But a large majority of these cannot be regarded as instances of any form of rheumatism. What other writers have described under the term purulent diathesis, *M. Bouillaud* classifies under the head of rheumatism; and by bringing all together he has succeeded in producing a famous long list of cases to maintain his position.

But such is the besetting sin of our author upon all occasions—a fondness for generalization from inaccurate principles. To do however all manner of justice to him, we shall extract a few of his cases.

Case.—A soldier, while recovering from what seems to have been synochus, imprudently exposed himself to cold, and was seized with a return of fever which was accompanied with violent pains in the joints, more especially in the knees. This was on the 17th of August, and he died on the 26th. On dissection, most distinct traces of endocarditis in the left side of the heart were observed; the lining membrane of the ventricle, its valves, and of the aorta was of a deep red colour, and several fibrinous and albuminous coagula were found in the cavities of the heart. The internal surface of the vena portæ, and also of the crural artery and of the internal saphæna vein, exhibited marks of inflammation. (It is stated in the report that *M. Regnault* had prognosticated during the life of the patient the existence of inflammation of the vessels in addition to acute rheumatism. Query: What are the symptoms of such a complication?) *A large quantity of yellow well-formed pus was found in the knee-joints, the synovial membranes of which were red and thickened.*

Case.—A young soldier, recently discharged from the Val de Grace Hospital cured of bronchitis, was re-admitted within a fortnight in consequence of a relapse. Two days afterwards the left wrist-joint became swollen and painful, and two days later the right knee, &c. was similarly affected. There had been a well marked fit of shivering before this second seizure. On the 21st (three days subsequently) the left knee and ankle-joints became painful and swollen: the constitutional symptoms seem to have been typhoid. The

patient became delirious, and died on the 26th—ten days after the first appearance of articular disease.

Dissection.—All the affected joints were found full of a thick yellow pus; this was observed also in the sheaths of the flexor tendons of the left forearm, and in the interstices of the fibres of the triceps muscle of the thigh: the articular surfaces did not exhibit any abnormal appearances.

The propriety of regarding this case as one of genuine rheumatism cannot surely be admitted: the next, however, is rather more satisfactory.

Case.—A soldier was admitted into the Military Hospital at Strasbourg, with an attack of most severe articular rheumatism. The pains were most violent in the knees, which were outwardly red and much swollen: the shoulders and wrists were also swollen, but in a less degree. On the fifth day of the seizure, the disease concentrated itself on the knees; the pain in the other joints having ceased. Next day, all the nervous symptoms were aggravated, and on the eighth day the patient died delirious.

Dissection.—Both knee-joints were outwardly much swollen. No sooner was an opening made into their cavities, than an immense quantity of pus flowed out: the synovial membranes were red and thickened.

The only other case which we shall give is doubly interesting, on the one hand, from being reported with more than usual accuracy and minuteness, and, on the other, from being drawn from the practice of M. Chomel, between whom and M. Bouillaud there is a keen war of opinion as to many of the leading points in the history of acute rheumatism.

Case.—A middle-aged woman, of a healthy constitution, was admitted into the Hôtel Dieu, on the 3d November. For eight days, she had been suffering with severe pains in all the joints, more particularly in the shoulders and knees. Next day she was freely bled and put upon a low diet. As the pains were not relieved, she was treated with large doses of tartar-emetic, according to the Italian method. On the 11th, the pains had left the joints, but the patient was distressed with severe colic and nausea, and the pulse was extremely languid. Next day the abdominal suffering was exasperated, and was attended with profuse diarrhœa. The patient died in the course of the evening.

Dissection.—The joints exhibited traces of well-marked inflammation: they were all filled with a thick synovia, which was of a yellow colour, turbid, gluey, and resembling concrete oil, or rather the spermatic fluid, if that was coloured yellow. The synovial surfaces were more or less red at several points. The pericardium contained two or three spoonfuls of slightly turbid fluid. Its inner surface was somewhat reddened and injected, and here and there exhibited spots of albuminous deposition.

We have already stated that most of the remaining—nearly thirty—cases, adduced by M. Bouillaud to prove that acute rheumatism may terminate in suppuration of the affected joints, are far from being satisfactory: most of them, unquestionably, cannot be regarded as examples of *genuine* rheumatism. For example, six of them occurred during the puerperal state, and on dissection in some of these all the traces of metritis, accompanied with suppuration of the uterine veins, were found. Surely no pathologist,

except our author, would regard such cases as belonging to *genuine* rheumatism.

In another case which occurred in a man who died with hydrothorax, and who for a week or two before death had been affected with severe pain in the right knee which was much swollen, a vast abscess was found on dissection among the muscles of the thigh, and a quantity of puriform matter in the capsule of the knee-joint.

Such a case can only be viewed as one of local arthritic disease, and has scarcely any thing in common with the essential characters of acute rheumatism. The same remark is applicable to several of the other cases reported at length by M. *Bouillaud*, who, with his usual zeal to establish a favourite doctrine, has admitted not a few instances of disease without much regard to pathological accuracy.

It is well known that in some cachectic states of the system—as, for example, after wounds and injuries, as well as during the puerperal state, and during phlebitis, and erysipelas—there is a peculiar tendency to an unhealthy inflammation of the joints taking place, and to the formation of purulent deposits in their cavities, and also in some of the parenchymatous viscera of the body. Our author indeed seems to be quite aware of this objection; but, with his characteristic skill in controversial fencing, he tries to evade its force, by telling us that rheumatic inflammation sometimes affects the internal surface of the bloodvessels, and that, in the cases we have alluded to, there was a rheumatic phlebitis or arteritis present. We may admire the ingenuity of the defence, but we cannot admit its force.

Let it not, however, be imagined that we withhold all praise from M. *Bouillaud*; we cheerfully acknowledge that he has contributed to throw some light on the pathology, still very obscure, of rheumatism, by bringing together the 37 cases, which he has reported; and although most of them must unquestionably be put *hors de combat*, we admit that several of them may fairly be regarded as examples of rheumatism terminating in partial suppuration of the affected joints.

And can we wonder at such an occurrence occasionally? Assuredly not; for, although suppuration is a rare sequence of rheumatic disease, cases do occur, where, from the influence of particular states of the constitution, or from the protracted duration of the disease, or from the operation of remedial agents that may have been used, or, lastly, from the co-existence of other morbid states in the system at the time,* the inflammation partakes much of the character of ordinary phlegmonous inflammation. We have already distinctly stated that, in a great number of cases called rheumatic, the disease is not simple, uncomplicated rheumatism, but a complex morbid state, the existent inflammatory action varying in its characters, and being associated, or not, with neuralgia at the same time. On the whole, therefore, we are bound to assent to the hitherto generally received

* M. *Bouillaud* gives it as his opinion, that the chances of a suppurative termination are proportional to the severity of the preceding rheumatic inflammation—a doctrine certainly not at all warranted by experience. Perhaps, indeed, the very reverse of this doctrine would be nearer the truth.

doctrine, that suppuration and ulceration are very rare, although certainly occasional, consequences of acute rheumatism. They have been usually observed in cases of very long duration, and when the disease has for some time fixed itself upon one joint in particular.

With respect to the *second* position of M. *Bouillaud*, that in acute rheumatism the synovial membranes of the joints are the parts primarily and essentially affected, we shall not detain the reader long. Unquestionably in a large number of cases this is strictly true. But that the aponeuroses or fasciæ of the muscles also, if not the muscular tissue itself, the bursæ mucosæ and the sheaths of the tendons are very often from the first the seat of the disease, cannot be denied. Some excellent practical writers have distinguished two forms of acute rheumatism—the *fibrous*, in which the aponeuroses, tendons, and muscles are chiefly affected, and the *synovial*, in which the lining membranes of the joints are primarily and essentially involved; and they have shewn that these two forms of the disease require certain specialities of treatment, to which we shall presently allude.

The *third* position of our author, that in the majority of cases of acute rheumatism there is a *coincidence* of pericarditis or endocarditis, or of both, is one of great interest, and explained and illustrated by him with much ability and zeal.

"Of 114 cases of acute articular rheumatism," says he, "of which we have kept a most minute record, in 74 the symptoms were severe, and in 40, they were much milder. Now of the 74, the coincidence of endocarditis or of endo-pericarditis was ascertained in 64 beyond doubt; whereas in the 40 cases there was not one in which this coincidence could be detected."* M. *Bouillaud* will not allow that in any case a genuine *metastasis* or *translation* of the inflammation from the joints to the heart ever occurs. Here again we have another instance of his fondness for extreme opinions. Because, in a number of cases, the affection of the joints and that of the heart are coincident or co-existent, he insists that the disease is never suddenly transferred from the former to the latter; although he afterwards acknowledges that "sometimes the endocarditis and the pericarditis appear subsequently to the affection of the joints, and, at the period of their development, this (the articular affection,) becomes very sensibly diminished;" adding, "but this does not authorize us to say that there is a veritable *metastasis*, as it rather seems in such a case that the affection of the heart acts, so to speak, like a *blister*!"

The following admirable remarks by M. *Andral*, taken from his notes on *Laennec's* immortal work, while they do all manner of justice to the merits of our author, stop short of his *exclusivism*.

"The researches of M. *Bouillaud* have shewn that there is a much more frequent *coincidence* between rheumatism and certain affections of the heart, than had been suspected before. In the present day we can no longer doubt that, in a great number of cases of acute articular rheumatism, the internal membrane of the heart has a singular tendency to become inflamed. For my own

* He adds that, in more than one-half of 300 cases of organic disease of the heart, examined by him, the patients had been affected at some previous period with rheumatism.

part, I no longer question the important influence of acute articular rheumatism in the production of acute diseases of the heart. On the one hand, I am convinced, by attentive investigation, that a considerable (*assez grand*) number of persons affected with various lesions of the heart have at some antecedent period suffered from acute rheumatism, and that it was from, or shortly after, this date that they began to experience some uneasy feelings in the cardiac region: and, on the other hand, having in a number of rheumatic patients watched the state of the heart day after day, I have in some measure heard the affection of this organ rise under my ear. At first, in some cases during the existence of, and in other cases after the cessation of, the articular pains, we perceive a blowing sound, which, feeble at its commencement, becomes daily more and more distinct. At this period, there is generally neither pain, nor palpitation, nor dyspnoea; subsequently, these two last symptoms make their appearance, and denote in most cases an incipient hypertrophe of the heart, which is the result of the endocarditis—the primary lesion induced by the rheumatism. I have seen other cases where, several years after an attack of acute rheumatism, no other morbid symptom of the heart, except a blowing sound, could be detected. In such a case we must admit that there is a contraction of one of the orifices of the heart, unaccompanied (which is very rare) with any thickening of its parietes or any enlargement of its cavities.”*

It is unnecessary to dwell further upon the extreme importance of early attention to the occurrence—whether this be alarmingly rapid, or insidiously slow—of any thoracic distress during, or for some time after, an attack of acute rheumatism.

If, under such circumstances, any degree of dyspnoea comes on, or if a feverish restlessness, increased at night, continues after the cessation of the articular pains, there is reason to suspect that some mischief is going on in the heart or lungs, or in both of these organs. Should prompt relief not be given, and especially if the error be committed, unfortunately not an unfrequent one, of attributing the symptoms to debility and spasm,—in consequence, perhaps, of the debility of the pulse and the occasional intermission of the dyspnoea—and treating them as such, the chances are that the patient will be lost.†

We have left ourselves but little space to comment on the *last*, and the most important position—that which respects the treatment of the disease.

The plan, which *M. Bouillaud* usually follows, is to bleed his patients

* In the *Medico-Chirurgical Review* for October 1827, will be found some remarks which, while they anticipate, strikingly confirm these observations of *M. Andral*. In one sentence it is stated:—“For many years past we have paid considerable attention to diseases of the heart; and, on minute enquiry, we have found that in the majority of cases there had been one or more attacks of acute or sub-acute rheumatism primarily. *There may be no direct metastasis at the time the acute rheumatism occurs—but the disease of the heart often steals on afterwards, without any other ostensible cause than the rheumatic diathesis.*”—p. 346.

† In the *Foreign Periscope* of our present number will be found the report of a most interesting case, from the private practice of *M. Bouillaud*, which illustrates in a very striking manner the danger of inaccurate diagnosis, and at the same time the success which often attends the adoption of vigorous antiphlogistic treatment.

twice on the day that he first sees them, and then once every succeeding day, independently of leeches and cupping, until the active symptoms are subdued. The average quantity of blood, drawn in severe cases, may be stated at from five to six pounds in the course of three or four days; and in less severe cases at about four pounds and a half in between two and three days. In some unusually severe cases, as much as eight, nine, or even ten pounds of blood have been drawn, before the resolution of the symptoms was fairly established; "but," adds M. Bouillaud, "I have lost none of those patients in whom the disease had attained *this extreme gravity*, by adopting *this extreme remedy*." The auxiliary or adjuvant means, which he recommends, are poultices, blisters, and afterwards moderate compression with bandages and pledgets smeared with mercurial ointment, or wetted with an astringent wash. "Opium, administered either inwardly or endermically, low diet, and diluent drinks, complete the list of our principal adjuvant remedies."

The effect of the treatment now recommended is, we are told, "to reduce the mortality of the disease to *Zero*; to prevent its lapsing into a chronic state, and also the insidious development of cardiac disorder; and, lastly, to abridge its average duration from six or eight to one or two weeks."

As to the treatment of the *chronic* forms of rheumatism, recommended by M. Bouillaud, it consists in general and local bleeding, although to a less extent than in the acute disease, and in the use of blisters, moxas, opiate preparations, internally as well as externally administered, vapour or sulphurous baths, and compression of the joints.

It is scarcely necessary for us to express our opinion as to the great defects of our author's *treatment* of rheumatism, whether acute or chronic. It will be observed that some of the most potent remedies are not even mentioned by name—as mercury, iodine, colchicum, and guaiacum. The extravagance of his bloodletting practice must at once be denounced as decidedly most injurious. It is rarely necessary to bleed from the arm oftener than twice or thrice at the utmost, provided we resort to the use, at the same time, of some of these internal remedies. From the almost specific effects of *mercury* in arresting inflammatory action, and in acting somehow on the constitution of the blood itself—rendering it less viscid and counteracting the tendency to fibrinous depositions—it forms one of the most potent of all anti-rheumatic remedies. The great objection to its use is the exceeding annoyance of the salivation that is so apt to be induced; but, in spite of this inconvenience, we believe that it should seldom be omitted in the treatment of acute rheumatism.

Iodine also, more especially its salt, the hydriodate of potash, is another excellent remedy. There is reason to believe that its action on the system is similar in many respects to that of mercury, although it is decidedly inferior to it in efficacy.

The Guaiacum mixture of the Pharmacopœia, used freely after bloodletting and purging, has been tried very largely by Dr. Seymour of St. George's, and found by him of almost unerring success in the severest forms of acute *fibrinous* rheumatism: it acts as a general evacuant, provoking perspiration, purging, and a copious flow of the urine. The colchicum, another powerful remedy, is better suited for cases of the *synovial* form of the disease. Cinchona is always a precarious, and often a most pernicious, medicine in

acute rheumatism; in enfeebled constitutions however, it, and especially quinine, may be administered along with mercury or guaiacum, to enable the system to bear the effects of these remedies. Opium cannot be trusted to alone, or be safely used at the commencement of the disease, as recommended by some physicians; although it is certainly the most powerfully efficient of all remedies, when the violence of the inflammatory action is arrested, and when the pains have become rather of a spasmodic than of a phlogistic nature: under such circumstances, a grain of opium every four or six hours will often act as a charm.

In adapting our treatment to each case, we should always keep in mind the morbid condition of the blood that is present in all. While it is surcharged with fibrine, bleeding, with the usual antiphlogistic remedies, and the use of mercury, iodine, and such a general evacuant as guaiacum, constitute by far the most efficient and certainly successful practice.

The treatment of the numerous ailments comprehended under the term of Chronic Rheumatism, is accompanied with far greater difficulty; still, much of this may be got rid of by attention to the remarks which we have already made as to the various morbid states which complicate, or even entirely replace, the original disease. The reason that so many cases of what is called Chronic Rheumatism are so intractable is, that there are several maladies co-existing at one and the same time; but we need not now recur to this subject. Suffice it to say, that whenever we have reason to suspect, in chronic rheumatism, that the blood is still buffy, the detraction of a moderate quantity will unquestionably facilitate the cure. In protracted cases, it is useful to make an *explorative* bleeding to a small amount, for the purpose of ascertaining if this condition of the blood be present; for if it is, the most successful internal treatment will be found to consist in the use of mercury—the oxymuriate or bichloride may often be used with admirable effects—or of iodine, or of guaiacum. If, on the other hand, the blood be not at all buffy, the probability is, that the so-called rheumatic pains either are connected with a gouty state of the system, or are chiefly of a neuralgic character.

In the first case, a course of alkaline remedies and of colchicum, coupled with an occasional purgative and abstinence from all fermented and vinous liquors, should constitute the basis of the treatment; and, in the latter case, the use of sedatives and tonics, more especially of bark, arsenic and such like remedies, not omitting the exhibition of alterative aperients,* promises by far the best chances of relief. To subdue local pains, blisters and sinapisms are usually much more effectual than the embrocations which are commonly used.

* The addition of small doses of Croton oil to aperients seems often to exert a very useful effect in protracted cases of neuralgic suffering. The exhibition of occasional emetics also is not unfrequently an excellent adjuvant: a full dose of an anodyne given after the operation of free vomiting will often soothe the most excruciating pain, when the anodyne alone would have failed.

A PRACTICAL TREATISE ON THE DISEASES PECULIAR TO WOMEN.
 By *Samuel Ashwell*, M.D. Part I. **FUNCTIONAL DISEASES.**
 London, 1840. Pp. 200. Octavo. Highley.

THIS is an excellent practical work, the result of Dr. Ashwell's extensive experience as obstetric physician at Guy's. A faithful analysis of its contents will enable our readers to judge of their value.

CHAP. I.—CHLOROSIS.

Symptoms.—Dr. Ashwell distinguishes three forms of this disease, viz. a mild and incipient, and inveterate and confirmed, and a complicated form. The *mild* form, often preceded from even early infancy by a greater or less state of debility, only manifests its peculiar nature at the period of puberty, when the non-establishment of the various changes incidental to that epoch excites maternal solicitude, ever awake to all irregularities of the menstrual functions. We need not detail the symptoms which manifest themselves; the pasty complexion, listless movements, capricious appetite, and numberless ailments of the chlorotic girl, are known even to the tyro. When the disease becomes *inveterate* and *confirmed* the sufferings are indeed great, the depression of spirits is distressing, the most extraordinary substances are consumed in place of natural articles of diet; the complexion assumes a dirty green cast, while the lips, tongue, and fauces are bloodless; the digestive organs are materially disordered, whence vomiting, constipation, and sometimes diarrhoea. The head is the seat of innumerable pains and anomalous sensations; the cellular texture of the body becomes more or less infiltrated, and the general surface is cold and pallid; it is sometimes very dry, the hair losing its brightness, and the finger-nails becoming brittle and split. Many symptoms, at this period of the disease, may easily be mistaken for indications of structural disease of some of the great organs of the body.

CAUSES OF CHLOROSIS.

“Predisposing.”—A delicate, feeble, and undeveloped constitution, where the circulation and nervous power are inadequately excited to perfect the organization of the body, in consequence of which the evolution of the ovaries is delayed, and their peculiar influence on the system, and particularly on the uterus, is withheld; thus, puberty is only imperfectly or perhaps not at all established, and menstruation, which must be preceded by puberty, is absent. At a later period of life, when even married women and widows are the subjects of chlorosis, its predisposing cause is most frequently derangement of menstruation; there is either retention, irregularity, or pain and difficulty in the performance of the function. Nor must it be forgotten, that profuse menstruation, menorrhagia, and chronic leucorrhœa, may induce chlorosis.” P. 7.

Unhealthy localities, the unnatural habits of the rich, the privations of the poor, and indeed all causes exerting an enfeebling effect upon the system, especially in early life, may predispose to the disease. Dr. Ashwell has seen one or two well-marked cases in men.

Exciting.—Circumstances exerting a depressing effect upon the mind, as disappointed affections, &c. &c. Diseases and habits which produce a debilitating effect upon the system in general and the sexual in particular, as amenorrhœa, menorrhagia, excessive venery, manusturbation, &c.

PATHOLOGY OF CHLOROSIS.

"It may probably be fairly assumed, certainly it is the most prevalent opinion, that chlorosis primarily depends upon a morbid condition of the blood, which secondarily affects the ovaries and uterus, by retarding their growth. This opinion is supported by the fact, that in the blood of chlorotic patients there is an increased proportion of the serum, with a marked diminution of crassamentum. This has always been my view of the disease; nor would it be difficult to trace to this morbid condition of the blood many, nearly all, the different theories that have been propounded." 8.

DIAGNOSIS.

Some of the symptoms of chlorosis, as cephalgia, dyspnœa, palpitation, &c., are too often treated by the ignorant or superficial observer as of inflammatory origin. "From the want of this caution, I have witnessed the very injurious consequences of such mistakes, the practitioner having forgotten, what in female diseases it is peculiarly important to remember, that the severity of the pain, and the rapidity of the pulse, are generally indications of irritability and excitement, not of inflammation; demanding narcotics, carminatives, and at the most, counter-irritation, not bleeding, active purging, and spare diet."

COMPLICATIONS OF CHLOROSIS.

Complication with Amenorrhœa.—It is an error frequently committed to suppose chlorosis and amenorrhœa to be convertible terms. There cannot be chlorosis without more or less amenorrhœa, yet amenorrhœa often exists without any degree of chlorosis. The complication of the two may arise, either, as it generally does, from the persistence of chlorosis preventing or arresting menstruation, or, occasionally, from the occurrence of amenorrhœa after healthy menstruation has been established. These complicated cases are those which, if promptly and effectually treated (usually by tonics) so often terminate in health. In some instances, however, the treatment is difficult and protracted, and great alarm is felt lest more serious complications should have occurred: indeed, advice is not sought in these cases, sometimes, until some vital organ has become involved. "I have often, during the last few years, been requested to treat such patients, of whom, had I judged from what I heard, I should not have predicted any danger; and yet, on careful inquiry—and in some instances at first sight—I have been convinced that the case was all but hopeless." Although these protracted cases, under a concurrence of favorable circumstances, sometimes do well, yet, ordinarily, some vital organ becomes the seat of fatal disease, if proper remedies be not resorted to.

Complication with Hematemesis.—This is by no means uncommon in

cases of chlorosis with amenorrhœa. The treatment may have been to a certain degree successful, the quality of the blood may have become improved, and, during the continuance of the amenorrhœa, engorgement of the digestive organs occurring, a vomiting of blood is the result, and it often continues to recur at intervals not very unlike the catamenial periods. Sometimes alarming anæmia results. These are the cases in which local emmenagogues are so useful. The quality of blood has now become sufficiently good, and endeavours must be made to divert it into its natural channels.

Complication with Derangement of the Digestive Organs.—These organs are always more or less affected, but sometimes very prominently so. Dr. Ashwell truly observes, that the real matter of astonishment is, that the powers of life are so long maintained, when we consider the nature and insufficient quantity of food taken by the chlorotic patient. Indeed, the vital powers are often reduced to the lowest ebb, and the recovery of the patient pronounced impossible; yet, the author's experience has taught him, that, where no predisposition to phthisis exists, there is no complication of the disease, "which affords such ample scope and reward to judicious, persevering, and observant treatment. It is rare for a structural change to occur in the stomach, liver, or intestines, in the most protracted form of the disease, although it is common to see the largest amount of functional derangement." Not only are the usual symptoms of dyspepsia present, but hypochondriasis in its worst forms, sometimes verging upon temporary insanity, frequently adds to the already abundant suffering.

Complication with Functional Cerebral Affection.—This is sometimes very distressing. The pain may be general and moderate, or local, excruciating and unbearable. In some cases it is of an intermittent and neuralgic character, while, in others, it is so constant and overwhelming as to lead to the belief of its resulting from organic disease. Various convulsive affections, seemingly originating in the severity of the pain, frequently occur. Vertigo, morbid acuteness of the senses, various sympathetic affections of the digestive organs, are also often present. It is consoling to know, that the result of experience proves that these symptoms rarely have an organic origin. In this complication, thus contrasting it with some others, the sleep often continues good, the appetite remains in some degree, and emaciation is not very rapid.

Complication with Affections of the Vascular System.—The symptoms resulting from these are of less frequent occurrence, but very formidable in appearance, and excite the greatest anxiety in the minds of the friends of the patient. They are total loss of colour, œdema, palpitation, syncope, &c. Dr. Ashwell has found ascites rarely present, except in cases occurring at the more advanced periods of life, when it arises usually from some structural disease in the abdomen. Care must be taken not to attribute the icterode cast of countenance to liver disease, requiring the employment of mercury.

Complication with Phthisis.—This is usually the cause of death, when

chlorosis terminates fatally. It is a question worthy of notice, whether chlorosis and amenorrhœa induce phthisis, or, whether these affections themselves do not rather arise from the originally phthisical tendency of the system delaying the approach of puberty, amid its other injurious influences. Although it is probable that chlorosis may in some cases produce phthisis, yet, in the majority of cases, it only develops the latent tendency to the disease. This opinion is confirmed by the fact, that however far the other complications of chlorosis may have extended, and however low they may have reduced the patient, they rarely pass into phthisis. In the present complication there may be an absence of the severe suffering found in some others, but the quick pulse, hurried respiration, rapid emaciation, and troublesome cough, too often replace these. Dr. Ashwell thinks the attention of the profession should be more directed than it has been to the too frequent occurrence of phthisis in this disease, especially as the fears of the patient and her friends are often lulled by the self-delusive nature of the disease. The prognosis is very dubious. Our hope of success consists in improving the condition of the blood, and our sign of having accomplished this is found in the encrease of flesh and in the diminished rapidity of the pulse, for, so long as this "beats 130, 120, or even 110 in the minute, it must not be supposed that any real amelioration has taken place." We must not be satisfied with the absence of auscultatory signs, but bear in mind, that the general condition of the patient is favorable to the deposition of tubercle. If we wait to adopt precautionary treatment until the stethoscope indicates the actual existence of the disease, it will be too late.

These various complications, which we have now considered, when they have long existed, render the case very confused, and difficult for accurate diagnosis. An obstinate leucorrhœa, moreover, is a frequent attendant, impairing the restorative powers, and materially retarding the cure. Simple chlorosis is usually a disease of early life; joined with amenorrhœa, it may be met with at any time between puberty and the cessation of the menses. The complication with phthisis is found chiefly between the period of puberty and the age of thirty.

TREATMENT OF CHLOROSIS.

The treatment of simple chlorosis should be the type for the treatment of the other forms; but, a most grave error is too often committed, by considering it a local, not a constitutional disease; and ignorant practitioners, from the untimely use of drastics and emmenagogues, have yet farther reduced the already enfeebled powers, and facilitated the advent of pulmonary disease. The author deplures, in common with every medical man of proper feeling, the prevalent faulty notions on the subject of physical female education, leading as they do to the production of so many serious and fatal diseases: he believes that, were these amended, chlorosis would become a rare disease. Alas! many, many yet must be the victims sacrificed at the shrines of fashion and folly, ere mothers learn prudence, or fathers compel the observance of the dictates of common sense.

Our first attention must be directed to the improvement of the state of the digestive organs, for, how shall we amend the deteriorated condition of the blood, until the organs of nutrition are in a fitting state for its elimi-

nation. But here a prudent hand must guide the means: our object is not to excite excessive purging, as a direct mode of cure, but to secure the due relief of the bowels by aloes and rhubarb, sulphate of soda and manna, and, where alteratives are required, the hyd. c. creta. Mild cordials should be combined with the aperients. Warm clothing, regular exercise, and, when the state of the appetite will permit, meat diet and mild malt drink, are to be recommended. If we succeed in improving the state of the digestive organs, the general vigour is in some degree restored, and the complexion partially cleared, but the catamenia are seldom by this alone induced. Now is the appropriate period for the administration of *iron*, especially the *sulphate*, while, had this remedy been employed prior to the due regulation of the secretions of the alimentary canal, the symptoms would have become aggravated, and not relieved. Its effect, when given judiciously, is sometimes magical. In some cases the subcarbonate is better borne, and occasionally other tonics, as quinine, sarsaparilla, zinc, &c. effect the purpose.

As to *Emmenagogues*, they are best employed when the pallor has become diminished, the bowels more regular, and the blood both more abundant and of richer quality. *Iron* (and especially the iodide, when the strumous diathesis is associated with chlorosis) is often alone a sufficient emmenagogue. The use of the mustard hip-bath, and of the local salt shower-bath across the loins, are excellent adjuvants. The injection of the vagina with the strong ammonia (liq. ammon. 3j. lactis fbj.) has proved useful in the hospital. Dr. A. has great doubts of the utility of applying leeches and cataplasms to the mammæ; he has often seen electricity useful. Travelling, with the change of scene and of habits it necessitates, as also a visit to chalybeate waters, and a sea voyage, have often cured chlorosis. The treatment requires to be early adopted, and most perseveringly continued, perhaps for months. As the cure progresses the diet should be improved, and the patient permitted to take mild ale or porter, or, if these are disagreeable, a little negus with her meals.

Treatment of the Complications.—The *hæmatemesis*, which frequently occurs in these cases, is sometimes accompanied with so much pain and congestion in several organs, as to lead to the adoption of active means, such as bleeding, purging, lead, &c., but always, according to Dr. Ashwell's experience, with bad effect. Bleeding is seldom required, and active or long-continued purging is always injurious. The general symptoms of chlorosis will enable us to distinguish the local affection from one of an inflammatory origin, and lead us to adopt means for increasing the natural menstrual secretion, such as electricity, the mustard-bath, leeches to the vulva, moderate cupping of the loins, together with the use of emmenagogues and an occasional purge. In the *cerebral* affections local cupping, blisters to the nape of the neck, moderate and cordial aperients, change of air, cheerful occupation and society, with active out-of-doors pursuits, give most relief. In threatened *phthisis* an early and entire change of air may sometimes avert the impending mischief.

II. AMENORRHŒA.

This Dr. Ashwell divides into Amenorrhœa of Retention, when at the

proper age menstruation is absent, and Amenorrhœa of Suppression, in which the menses, having been once in existence, become suppressed.

(A.) AMENORRHŒA OF RETENTION.

1. *From Deficiency, Malformation, or Structural Disease of the Organs of Generation.*—These cases are happily rare, and of course often incurable, as, for example, when the ovaries are absent or structurally diseased: menstruation may however occur when but a portion of an ovary remains. The absence of the ovaries confers a masculine appearance upon the female, and she is often submitted to most serious disorders of her health. In cases of absence of the uterus the general health has sometimes not seemed to suffer, which however is not the case when the menstrual fluid, although secreted, is prevented escaping by some malformation; and, if not liberated by a surgical operation, the accumulation may give rise to serious or even fatal symptoms.

Treatment.—This of course, where the organs are absent, is out of the question; but, where obstruction or malformation exists, judicious surgical interference will do much, although the risk of inducing peritoneal inflammation should be always borne in mind.

2. *From a slow and partial Development, or an entire Absence of Puberty.*—The period for the establishment of puberty varying in different individuals, the mere absence of menstruation at the usual epoch must not be regarded as disease; delicacy of constitution or idiosyncrasy may retard its development. Rare cases will sometimes occur, even independently of congenital malformations, in which puberty and menstruation are never established. If the amenorrhœa be very prolonged, the state of system characteristic of chlorosis will manifest itself. These cases usually terminate favourably, if violent means be abstained from, but months or even years may have to be spent in their treatment, which is of a similar description to that required for chlorosis.

3. *Amenorrhœa after Puberty.*—(a) *As occurring in the Plethoric and Robust.*—This form of amenorrhœa, characterised by a state of congestion, or of active plethora, is usually found in the inhabitants of rural districts; it is generally curable, though often neglected. Fulness, and pain of the head, and pain in the lumbar region, with a full pulse, accompany this form, especially at the periods when menstruation should occur. Some women have naturally long intervals between their periods, plethora and dysmenorrhœa being at such times present. If the amenorrhœa be neglected or badly treated, it may become a most obstinate disease. It usually originates in a congested state of the uterus impeding its secretory powers. The symptoms of plethora may become subdued, and yet the case pass into one of ordinary chlorosis, the establishment of the catamenia being indefinitely delayed.

Treatment.—General bleeding is not required unless some important organ becomes congested. Cupping the loins or sacrum, and the application of leeches to the labia, thighs, or uterus, together with active purgatives, usually relieve sufficiently. The effectual use of the mustard hip or foot bath

(maintained at the temperature of 96° or 98° for an hour at a time), every or every other night, is very desirable, and active walking exercise should be insisted upon, but riding tends to encrease the uterine congestion. Dr. Ashwell has found small revulsive venesections (5 or 6 ozs.), about the period of the menstrual effort, very useful, but he cannot say the same for the practice of leeching the mammæ. Even when the plethoric state has become subdued, we should not be in too great haste to resort to emmenagogues, as some months may be required before the uterus will properly resume its functions. Where, however, true debility ensues, and chlorosis is threatened, they should be employed.

(b.) *As occurring in the Delicate, Hysterical, and Irritable Female.*—These cases are more common than those already noticed, the induction of menstruation being in them difficult and tedious, and, in spite of emmenagogues, they will often degenerate into cases of chlorosis complicated with amenorrhœa.

(B.) AMENORRHOEA OF SUPPRESSION.

1. *Recent and Acute Suppression.*—This is especially brought about by mental emotion and cold. The symptoms vary according to the constitution of the subject. In the plethoric and healthy we may have congestion, or even inflammation of the uterus; in the delicate and nervous, spasmodic and neuralgic symptoms. Hysteria approaching to epilepsy, and partial paralysis, are sometimes present.

Treatment.—When inflammation exists (and it has been known even to pass into a state of gangrene), prompt and active bleeding are called for, the mere suppression being quite a secondary matter. In the delicate (in whom suppression is more apt to occur), the pain and other symptoms are rarely of an inflammatory origin, although the satisfactory determination of this point is sometimes very difficult. In these cases the pain is very fugacious and changes from place to place, often accompanied by hysteria and syncope. Here, even local bleeding is seldom useful, producing a metastasis, but not a removal of the pain. Active purging to relieve the bowels, usually overloaded, is desirable, while local baths and antispasmodics should also be had recourse to. Anodyne and antispasmodic clysters are sometimes almost magical in their effects; they should be small in bulk, and retained in the rectum for a considerable period, by pressing its orifice with a napkin. Sometimes, as the result of this treatment, the menses at once appear; but, on the other hand, when month after month passes without this being the case, a state of chronic suppression becomes established. After a first attack of suppression, every effort should be used, just prior to the next period, to induce the natural secretion. The warmth of the body should be carefully provided for, the bowels kept free, mental and physical excesses avoided, and the mustard baths used on alternate nights.

2. *Chronic Suppression.*—This may either result from the acute form, or come on gradually owing to constitutional delicacy or ill-health. It may also arise from organic disease of the organs of generation, or from a premature cessation of the menses. In considering these cases we must recollect that some women, although healthy, menstruate so slightly, that chronic sup-

pression would seem otherwise to be at hand. Among the symptoms may be mentioned vertigo, obstinate headache, variations of temperature of the surface, loaded bowels, dyspnœa, palpitation, &c. If the disease continue unrelieved, the health may become broken up, and phthisis or organic abdominal disease ensue.

Treatment.—Many slight cases from cold, &c. will disappear without aid, and, where no effect is produced on the health, the case may be left to Nature. When abundant leucorrhœa is present, it should, owing to its debilitating effects, be checked as soon as possible. The cases occurring in nervous subjects are usually very protracted; and those yield much more easily, where some remains of congestion still exist, provided this be effectually relieved, before resorting to stimuli: when this is doubtful a careful examination of the uterus should be made. When debility exists, unaccompanied by plethora, stimuli and tonics are required.

III. EMMENAGOGUES.

The author does not believe that there are any medicines which exert a specific effect upon the menstrual secretion, but that there are several, which, by reason of their stimulating the uterus, become important auxiliaries. These means are contra-indicated in amenorrhœa and chlorosis, arising from malformation or absence of the generative organs, as also in cases of mere absence or slow development of puberty, or when the amenorrhœa is connected with phthisis or plethora. They are found useful in inactivity of the uterus, occurring after the establishment of puberty, where, neither plethora, or marked delicacy of constitution is present, as also in hysterical irritable women, in whose cases cordials and tonics have been tried in vain. In chronic suppression they are especially indicated. Their exhibition should be preceded by local depletion, regulated diet, and purgatives.

1. *Local Emmenagogues.*—The only powerful emmenagogue by which the uterus can be directly stimulated is *electricity*. Although employed with some success of late at Guy's, it is an uncertain remedy and should be very cautiously used. *Leeching the os uteri.*—If some leeches be applied by means of a glass, a few days prior to the period, and repeated several times, by removing the congestion, they will frequently reproduce the secretion. *Stimulant injections of the vagina.*—Dr. Ashwell speaks highly in favour of the ammoniacal injection. It should be commenced three days prior to the expected period, and should be retained in the vagina for ten or fifteen minutes, by closing the vulva with a napkin. It should produce a sense of heat, tingling, or even of pain, and should not be employed when congestion is present. He reprobates, as risking the excitement of peritonitis, the injection of the uterine cavity itself. *Mustard hip bath* is often very useful, but the patient should remain in it an hour each time. The exhibition of *mustard* by the mouth (gr. 8—12 ter quaterve ex M. campb), just prior to the menstrual period, is often attended with excellent effect. *Sexual intercourse* is sometimes a good emmenagogue, though of course, of but limited application. *Stimulating clysters* are much recommended by some authors, and Dr. Ashwell has used that of Dr. Schonlein (Aloes gr. x. mucil. ʒj. bis terve die)

with good effect. Leeching the vulva or pubes, stimulating the thighs, hypogastric or lumbar regions with embrocations, flesh-brushes, &c. &c. are all useful adjuvants.

2. *Constitutional Emmenagogues.*—The author thus expresses his opinion on *Mercury*.

“ It is not to be used in slight cases, nor where there is extreme exhaustion, a predominant irritability, or a tendency to phthisical or strumous disease. But, in obstinate amenorrhœa, where other treatment has failed, where there is chronic inflammation or permanent congestion, and any evidence of incipient structural change, there is no remedy comparable to this. As an alterative I have not used it successfully; but if salivation be produced and maintained, mercury often ensures decided and permanent benefit. If the pulse becomes more rapid and less strong; if constitutional irritation and weakness daily increase; if there be cough or diarrhœa, these not having previously existed, the mercury should at once be discontinued. More frequently, in cases warranting its use, improved symptoms will follow moderate salivation. The mercurial effect should be carried so far as to produce soreness of the gums and moderate salivation; and these should be kept up for twelve or sixteen weeks.” 77.

Iron.—This excellent medicine is the more valuable, as, since it acts by improving the impoverished state of the blood, its effects are more likely to be permanent. Plethora and constipation must be removed before employing it, and it should be discontinued on the appearance of “ giddiness, headache, sickness, and a quick or full pulse.”

Secale Cornutum.—Dr. A. reports unfavourably of the emmenagogue powers of this medicine. It should be employed cautiously, as its long-continued use will be followed by irritation and spasm of the abdomen. It is most successful in relaxed and debilitated habits, and when determinate efforts are making by the uterus to establish its secretion. *Iodine*, by improving the condition of the blood in scrofulous subjects, is sometimes a very good medicine, but Dr. Ashwell has met with repeated failures. *Strychnine* he has used without success. *Nitre* occasionally exerts a beneficial effect, through the medium of the kidneys. *Aloes* should not be given in a congested state of the alimentary canal or uterus, but, when this is not present, it often determines the inactive uterus to secretion.

IV. VICARIOUS MENSTRUATION.

This, when it neither deranges or exhausts the powers of the system, can hardly be called a disease: it usually occurs in the unmarried, (when married women suffer from it, they rarely conceive during its existence,) and as often in the weak as in the robust. The discharge, usually sanguineous, is occasionally leucorrhœal. “ Some portion of the pulmonary and intestinal mucous tissues are thought to be the more common seats of the vicarious loss; but certain it is, that the nipples, the ears, the gums, the umbilicus, the axillæ, the bladder, any part of the skin, or mucous membranes, or the surface of an open ulcer, may occasionally by gush, more usually by slow

transudation for several days, furnish the vicarious blood. In the regularity of its return, it seldom resembles the healthy function, although cases are recorded where the menstrual epoch has been exactly observed." The discharge is frequently preceded by local pain. It never terminates fatally; the uterus resuming its functions eventually, and the vicarious organ sustaining no injury.

Treatment.—If it occur often, and premonitory symptoms are present, emmenagogues, in the absence of plethora, may be used; while, if congestion of the uterus exists, the ordinary means for subduing it must be put in force. "A smart drastic purgative may not only prevent the vicarious attack, but also induce menstruation; and I have several times, after depletion, witnessed the good effects of electricity and the strong mustard bath, at a high temperature." If the hæmorrhage be great, it must be treated on general principles.

Vicarious Leucorrhœa.—In these cases "strictly speaking, there is amenorrhœa, because a mucous, instead of a sanguineous secretion, is furnished by the minute extremities of the uterine arteries. But there is activity instead of torpor; and it will be found, on inquiry, that all the symptoms denoting menstruation regularly appear, especially when this condition is vicarious of the catamenia at an early age." It is most common in delicate females, and in women exhausted from various causes. Dr. A. has known conception occur during this colourless menstruation. In early life, when it occurs only at intervals, the health is usually not much deranged, and, under favourable circumstances, natural menstruation eventually displaces it. The *treatment* is that required for vicarious menstruation, good air, tonics, and nutritious diet being often necessary to assist in establishing the natural functions.

V. DYSMENORRHŒA.

"Dysmenorrhœa is an important disease. It is very common, and produces extreme suffering—it often prevents conception, and, if pregnancy has occurred during its continuance, the woman is exposed to the risk of abortion. Although, in itself, it is not a fatal malady, yet it admits of proof, that malignant diseases have followed its protracted existence, and, lastly, it is exceedingly difficult to cure." 100.

Single women are most liable to it, and especially those of delicate, strumous, or phthisical constitutions. It is rare among those of a sanguine temperament. The mere painful state which precedes the menstrual secretion, though often excessive, does not constitute a case of dysmenorrhœa. The disease manifests itself under various forms.

1. *Irritable or Neuralgic Dysmenorrhœa.*—This occurs independently of inflammation or congestion. After an irregular condition of the menses occurring for some time, dreadful pain accompanies the emission, while the discharge itself is scanty and clotted. The degree and duration of suffering vary much in different cases, depending much upon the local organization of the parts, and the general susceptibility of the patient: it sometimes is horrible and protracted for days. The mammæ usually sympathize, but the

constitutional disturbance is not great, and the strength, after the attack has subsided, remains little impaired. If, however, the case be neglected, and the disease established, the general health gives way, and complete anæmia and chlorosis may result. In the *plethoric* form the expulsive efforts made to discharge the clots are very violent; exactly resembling the throes of labour. The *congestive* form is often induced by emmenagogues improperly used, determining blood to the uterus. Here, too, intense sufferings are proved by the expulsion of small coagula, which are often mistaken for ova. Mackintosh, Capuron, and others, attribute the symptoms of dysmenorrhœa to *mechanical obstruction*, from a strictured state of the cervix, or a partial obliteration of the os uteri. Dr. Ashwell, without going so far as this, still believes, that in many cases such contraction exists, but alludes to some in which its dilatation was not followed by relief.

Diagnosis.—This is of importance in cases of suspected abortion. "The duration of the complaint, the nature of the menstrual secretion in former periods, the enlarged state of the uterus from congestion, as ascertained from examination by the vagina and rectum, independently of the physical characters of the product, are quite sufficient to satisfy any observer." The author quotes Dr. Montgomery's admirable observations on the distinction between true and spurious ova.

Pathology.—Much difference of opinion prevails upon this point; some consider the disease as always of a nervous, and others as of an inflammatory nature. The author believes that either of these states may prevail in different cases, for, while in some there is mere irritation, producing excessive suffering, in others, a low degree of inflammatory action exists, producing the false membrane, which is extruded with such difficulty; and which, if it continue long enough, may cause a degree of thickening of the os and cervix uteri sufficient to create a mechanical obstacle, and in other cases may even lay the foundation for organic disease.

Prognosis.—This disease is never directly fatal; and, if it be considered a mere neuralgia, however great, the suffering, a favourable prognosis may be given. In patients predisposed to scirrhus disease, our opinion should be guarded. In the great majority of cases the affection is cured by medical treatment, child-bearing, or by the natural cessation of the menses.

Treatment.—There are, in the treatment of every variety, two principal indications: to alleviate the urgent pain of the menstrual period, and to employ, during the intervals of the discharge, such remedies as shall restore to the uterus its healthy secretory power. Both are occasionally accomplished with difficulty; the first, however, is generally the most easy of fulfilment." 109.

In the usual or *neuralgic* form, the patient should employ the mustard hip-bath on the accession of the premonitory pains, repeating it three or four times in the twenty-four hours, and remaining in it half or three quarters of an hour, or even, if the pain is very violent, until faintness comes on, while nauseating diaphoretics should at the same time be given.

In mild cases the hip-bath and slight narcotics suffice. When the pain is very severe morphia and opium suppositories are required. When, from the forcing efforts made, there is reason to believe that a coagulum or

false membrane is in process of expulsion, repeated doses of the *ergot* may facilitate it, and obtain at least an interval of ease. General bleeding is sometimes, local always, required: this latter is perhaps best performed by leeching the os uteri, or rather by scarifying that part, as recommended by Mr. Fenner.* Fomentations and anodyne injections of the vagina must not be neglected.

During the intervals, all the means calculated to restore the general health, as mild aperients and alteratives, chalybeates, fresh air, exercise, &c. must be resorted to. Dr. Ashwell has been disappointed in trying the volatile tincture of guaiacum, as recommended by Dewees. In the congestive and plethoric forms, occasional depletion is required, while the use of tonics requires great care. The author considers marriage as often remedial, although very bad cases do sometimes occur in married life. When structural change is dreaded, mercury, perseveringly employed, is indicated: it should be had recourse to when the disease is very obstinate, and the membrane habitually expelled; but, especially, when there is a thickened or indurated cervix. When the cervix is enlarged and hardened, the iodine ointment may be advantageously used.

VI. MENORRHAGIA.

Under this head, Dr. Ashwell considers both cases of profuse menstruation, and cases of uterine hæmorrhage independent of pregnancy.

1. *Profuse Menstruation without Uterine Bleeding*.—Females somewhat advanced in life, and of a delicate habit of body, are more liable to this form than the young and robust. Climate and idiosyncrasy cause varieties in the quantities lost at the menstrual period, and our judgment must be formed principally from the effects upon the system. Menstruation may be excessive from the large quantity lost in a short time, or (more commonly) from a small discharge being continued over a very long period; or, again, from the return of the periods being too quick, "young and single women are more prone to the latter; while married females, weakened by childbirth, undue lactation and leucorrhœa, are obnoxious to the former variety." Leucorrhœa is usually present prior to or during the intervals. The symptoms are those which usually attend hæmorrhage. On examination per vaginam a flabby state of the various organs is found; the os uteri is somewhat patulous, but there is neither tenderness or induration. These patients are very prone to abortion and to prolapsus uteri. In a few cases plethora, but in most cases a delicacy of system, (which may be produced *inter alia* by repeated labors and abortions, undue lactation, excessive venery,) predispose to the disease. It is distinguished from the other forms of menorrhagia by the absence of coagula.

Treatment.—In the plethoric and robust the discharge is often salutary; and may be permitted to subside naturally. Moderate depletion (usually local) may be instituted prior to the menstrual period. In delicate and feeble women, stimuli and anodynes may be required; and, when the dis-

* See Medico-Chirurgical Review, No. 64, p. 620, April 1840.

charge is very great, the ergot is especially useful in checking it. The local application of, and injection into the vagina of cold water, and even the plug, (though rarely when the case has been well treated,) may be required. In the *interval*, means directed to the improvement of the general health, together with salt-water baths, vaginal injections, and cold sponging the loins and hypogastrium, must be put into requisition.

2: *Profuse Menstruation with Discharge of Blood.* (a.) *Acute or Active Menorrhagia.*—This is not very common, occurs chiefly in the robust, and is preceded by plethoric symptoms, which are indeed often relieved by the discharge. The frequent recurrence of the discharge eventually deranges the health seriously. The treatment is like that already named, and smart drastic purges are often of great utility. When spasmodic rather than inflammatory action is present, nauseating doses of ipecacuanha, and clysters of assafoetida and opium are the remedies. Great care is demanded in the management of the *interval*, and caution is especially required respecting tonics and stimuli, which, if injudiciously employed, only serve to keep up the discharge: thus Dr. Ashwell has known cases which obstinately resisted the ergot and tonics, cured by recurrence to antiphlogistics.

(b.) *Passive or Chronic Menorrhagia.*—This, occurring in the delicate, hysterical or exhausted female, is the most common form of the disease, and often arises from the neglect of early profuse menstruation, and from the injurious employment of stimuli. Every degree from the most trivial to the most dangerous prostration may occur, and, although the disease is in itself rarely fatal, yet it may give rise to dropsical effusions and other serious mischief.

Treatment.—The most absolute rest is requisite, and, in the aggravated cases, the same treatment which is required for puerperal hæmorrhages is required. Dr. Ashwell thus expresses himself on the subject of *astringent injections*.

“Astringent injections should rarely be used during the first few days of the menstrual period, as they often produce uterine spasm; but when coagula are passed, either alone or mixed with the catamenial fluid, the secretory function is either partially or entirely suspended, and injections may then be highly beneficial. It is essential that the patient lie down, when the injection is thrown into the vagina, that the pelvis be raised by placing a sofa cushion under the hips, so that the fluid may easily reach the upper extremity of the canal, and that whatever quantity be injected, it shall be retained for ten or fifteen minutes in direct apposition with the parts. To effect this, the nurse should make firm pressure on the vaginal orifice by a napkin accurately applied. Where these conditions are complied with, and where occasionally, in susceptible and irritable women, the injections are slightly warmed, so as to prevent the probability of the occurrence of uterine spasm and pain, I know practically that great good will generally result from their administration.” 139.

Dr. A. employs the nitrate of silver, decoction of ergot, oak bark, acetate of lead, sulphate of iron, &c. &c. as materials of injections, and prefers the india-rubber bottles with ivory tubes to syringes. The following is our author's opinion of the *plug* in aggravated cases.

“During the flow, if alarming loss of blood seems to be approaching, the ergot and opium, injection of cold water and astringent lotions into the rectum,

and, above all, plugging the vagina as far as the os, must be practised. Soft dry tow, slowly introduced in small quantities, till the passage is entirely filled, forms the best tampon or plug, and it may be allowed to remain unchanged for twenty-four or thirty hours. The patient will probably object to such a remedy and suffer slightly from its use; but neither of these circumstances are sufficient to justify the practitioner in giving it up. A silk handkerchief, lint, or linen, may be used, but they must be dry; if wet or saturated with moisture, their introduction is painful and difficult: dry, soft tow, in small pieces, is certainly far better. I am convinced that, in excessive menorrhagia, plugging is not sufficiently often resorted to." 140.

(c.) *Congestive Menorrhagia*.—This form usually occurs at the middle or more advanced periods of life. It possesses characters different from the other forms, and Dr. Ashwell is surprised that so little attention has been paid to it. It is very tedious, sometimes lasting for years, copious leucorrhœa often accompanying it. The author has not met with it prior to the ages of thirty-eight or forty, but he has met with modified attacks after menstruation might have seemed to have ceased. The effects vary according to the degree and continuance of the discharge, which sometimes continues for months without intermission, or degenerates into leucorrhœa. Prior to the repetition of a fresh irruption, there is often great bearing-down in the region of the uterus, and Dr. Churchill has observed great dysury frequently. The disease sometimes undergoes a natural cure by the occurrence of pregnancy, and more frequently from the cessation of the menses. There is often great difficulty in deciding whether organic disease is present, and this can only be ascertained by a careful examination per vaginam. Even when such disease does not exist we shall find "an increased uterine bulk, fulness of the cervix and openness of the os uteri."

Treatment.—Where plethora is present, either general or local bleeding, and, if there be fulness or pain about the cervix uteri, scarification of that part, must be employed. Sexual intercourse and all kinds of stimuli must be avoided for some days prior to the menstrual periods. The various debilitating effects resulting from the excess of discharge, must be treated upon general principles. Astringent injections of the vagina are useful, especially when abundant leucorrhœa is present. Although ergot has often failed, and sometimes even produced ill effects, yet Dr. Ashwell speaks favorably of it. Lead and opium, turpentine, iron and opium, have in other cases been useful.

Dr. Ashwell considers menorrhagia may frequently be attributed to the avoidance of sexual intercourse, and the consequent congestion of the uterus and ovaries. "This abstinence is dangerously practised to avoid the risk of adding to the number of a family, already thought to be too numerous for the pecuniary means of its principal supporter." Loaded bowels and luxurious living are causes of menorrhagia, and purgatives used twenty-four hours prior to the expected attack are often very useful.

VII. LEUCORRHŒA.

Of all the sexual diseases this is the most common: few mothers escape its attacks. The young and robust female is less liable to it than the deli-

cate and older one. In its mild form it is so trifling a disease, that it is very often neglected by the patient.

"And yet I believe, if care were taken at this early stage, if ablution only was frequently practised, the tone of all the parts, and more particularly of the secretory membrane, would be regained, and further mischief entirely prevented: so far as my observation has gone, there is amongst female youth, and women generally, in this country, an unfounded dread of ablution of the external organs, either cold or tepid. The vicissitudes of our climate in some measure account for and justify the impression, but nevertheless it is too general, and extensively injurious." 159.

It may last for months or years, or sometimes during life; the ordinary secretion from the genital organs, is a glairy, lubricating, white-of-egg like fluid, but the leucorrhœal fluid varies according to the part whence it proceeds: thus, that from the vagina is more abundant and less viscid than the uterine, while, that proceeding from the interior of the cervix uteri, is more tenacious than either. It assumes every variety of appearance however, from that of the simple encrease of the natural mucus, to a state of mucopurulency, purulent ichorous, sanguineous, and varying-coloured discharge, especially in cases where inflammatory action or organic disease exists. An examination per vaginam, when inflammation is present, will discover a slight encrease in the size of the uterus and a tenderness of its cervix; at other times, this last is found soft and patulous: the speculum shews it to be sometimes red and at others pale.

Dr. Ashwell does not attempt to classify cases of leucorrhœa into uterine and vaginal: the diagnosis of the part of the mucous membrane affected is often difficult, and very frequently both portions are implicated. The vagina is however usually the seat of the disease, and leucorrhœa so originating is usually the least severe and most easily curable; when there is great constitutional disturbance, and the leucorrhœa is very obstinate, the uterus is usually the seat of the affection. The author describes four forms of the disease.

1. *Acute and Mild Leucorrhœa.*—Cases of mild leucorrhœa, arising from excitement and congestion of the vessels of the secreting parts, are the most frequent, the locality of the discharge in such cases being usually situated in the glands at the entrance of the vagina. In some of these cases there is much local and constitutional irritation, especially if they be badly treated at the beginning, and, even under the best treatment, the case occasionally proves very obstinate and passes into the chronic form. Generally, however, leucorrhœa is a disease rather of weakness than of plethora. There is a class of cases well deserving of attention; they arise among women who indulge too freely in the pleasures of the table, and lead a sedentary life: corpulency, accompanied with debility, is produced; the abdominal and generative organs become loaded with blood, and their functions improperly performed. In these cases profuse menstruation and leucorrhœa are frequent symptoms, and require careful treatment, for, if the discharges be too suddenly arrested, apoplexy, or various serious abdominal diseases may ensue.

2. *Chronic and aggravated Leucorrhœa.*—This is the form of leucorrhœa

which is so difficult of cure. It usually arises from early neglect or bad treatment. Yet, not unfrequently, a copious discharge of this kind seems to be habitual, proving a frequent cause of sterility (from the anæmia of the generative organs), and of prolapsus of the uterus and vagina, and eventually of much constitutional mischief. In young women, chlorosis and amenorrhœa, and even phthisis, may result. We must not, in cases of local suffering and fetid leucorrhœal discharge, too hastily conclude that structural disease of the uterus exists, but must resort to careful manual and ocular examination. With some women, and especially married women of a leuco-phlegmatic habit, whose constitution has been weakened by sexual excess, menorrhagia, abortion, or other debilitating cause, a constant leucorrhœal drain is sometimes kept up, producing few marked symptoms, while nevertheless the appearance of the patient is that of one suffering from a debilitating disease.

3. *Symptomatic Leucorrhœa*.—With many symptoms in common with ordinary leucorrhœa, there are several special ones, varying with the peculiar causes of the disease, and requiring a special treatment. Examinations carefully made, and frequently repeated, can alone assure us whether severe cases depend upon organic disease or not.

4. Dr. Ashwell makes some interesting remarks upon a *peculiar form of leucorrhœa*, which in its nature somewhat resembles hydrometra. The patient, after having long suffered from muco-purulent leucorrhœa, finds the discharge cease; a sense of fullness of the uterus and neighbouring organs follows, and, after it has endured during a varying period, from four to six ounces of a fluid, exactly resembling pus, comes away in a gush, and is eventually followed by a re-establishment of the muco-purulent secretion. If an examination per vaginam be made just prior to the sudden discharge, the uterus is usually found somewhat enlarged, the cervix swollen and tender, and the os closed partially. The cases are rare and usually difficult of cure. "I have never seen the affection in young females. Married women, and particularly widows, or those in whom the reproductive organs having been employed are so no longer, seem to be its frequent subjects."

Causes of Leucorrhœa.—As already mentioned, leucorrhœa occurs especially in the delicate and strumous, from causes inducing encreased action or inflammation of the various surfaces. These are especially cold, moisture, and excitement followed by debility, arising from many causes, as sexual excess, abortion, menorrhagia, lactation, &c. The irritation of a pessary or of stimulating injections has produced the disease; other causes of irritation act *indirectly*, and by these the chronic form of the disease is produced. Thus we may see it result from amenorrhœa, as also from irritation of the digestive organs, or of the spinal marrow.

Pathology.—Leucorrhœa arises from two different conditions, viz. hyperæmia, or encreased action of the secretory vessels, and debility, whether original, or resulting from the continuance of the former state.

"By some authors nearly all the cases are supposed to depend upon weakness, excepting such only as are accompanied by symptoms of inflammatory

action. There is truth in this opinion, if the examples be included where the leucorrhœa, having been of the first kind originally, has, by its continuance, terminated in the opposite state. Let it however be remembered, that it does not necessarily follow because the system generally is delicate, that the vagina and uterus must of necessity be in a state of anæmia. Still, original or acquired feebleness of system may give increased efficacy to the various exciting causes of this prevalent malady." 171.

Diagnosis from Gonorrhœa.—This is very difficult and sometimes quite impossible, seeing that leucorrhœa is itself often decidedly purulent, and may produce a discharge from the male organs, the disease so produced being however very mild, easily cured, and seldom followed by gleet.

"The perplexity, therefore, of these cases, is fully admitted; and it will often happen, that where we are most anxious to arrive at a positive conclusion, we shall be least able to do so. At all events, it behoves the practitioner to be extremely tenacious of the reputation and happiness of parties thus circumstanced. It is always his duty to cure the disease, but rarely to venture upon the exposition of its nature. If he can positively affirm that it is of simple origin, let him do so, if suspicion has been aroused; if not, it is better to avoid any distinct allusion to the matter." 175.

Treatment.—In simple cases, wherein the natural discharge from the parts is merely increased in quantity, rest, abstinence from local and general stimuli, aperients, and a mild astringent wash, will usually shortly effect a cure. In the *inflammatory* form, which is rarer, local or general bleeding should be employed, and if the cervix uteri is swollen, red and tender, it should be leeches or *scarified*. "I have now several times scarified (not punctured) the neck of the uterus by a common lancet, mounted on a piece of whalebone, with marked benefit. The pain of the incision is most trifling; there is no ulceration or suffering afterwards, and in 24 hours the cervix generally seems to be entirely free from congestion." In one case he mentions, four or five ounces of blood were thus procured in a quarter of an hour. Local baths, aperients, salines and narcotics, are all to be employed. Astringents must be delayed until the inflammatory action has been subdued and the discharge becomes more abundant, or they will do harm. At the proper time these injections, together with tonics and stomachics, are very useful. In favorable cases a cure soon results from these means, but in other cases an *obstinate oozing* of discharge continues, producing from its prolonged continuance effects, which never would have been feared from its quantity. These cases much resemble the drainings of passive menorrhagia, and like them are often cured by the injection of three or four ounces of tepid (and after a while cold) fluid into the rectum night and morning. When the leucorrhœa continues obstinately and in large quantities, an examination per vaginam should be instituted, in order to distinguish those cases which arise from organic or specific disease, from those which result from what Hunter called the "*habit of action*:" and this is especially requisite when the discharge is fetid or acrid. In these cases a great variety and constant change of astringents will be required, and should be used in conjunction with tonics and other means for the establishment of the health. The nitrate of silver forms the best material for injection in obstinate cases. Stimuli, such as turpentine, lytta, and copaiba, are often given with advantage in these chronic cases.

An inveterate leucorrhœa cannot always be safely cured, without encreasing other excretions and observing a spare diet, especially when it has succeeded to suppressed or diminished discharges of any kind; while in women of full habit of body and luxurious modes of life, a seton may even be required. Our attention must be especially directed to this point in patients of a somewhat advanced age, in whom congestions of various organs are more probable, as also in the strumous and enfeebled subjects. "After the cure of habitual leucorrhœa, ablutions of cold water, at least, if not injections into the vagina, should be daily practised; avoiding their use for a few days before and subsequent to menstruation." Dr. Ashwell, alluding to the success said to attend the practice of the French physicians, of injecting the cavity of the uterus, justly represents it as fraught with danger.

VIII. INFLAMMATION OF THE CERVIX UTERI.

This disease, first accurately described by Sir C. Clarke, Dr. Ashwell considers of infrequent occurrence, having seen but 20 examples out of 1000 cases of sexual disease at Guy's. It rarely occurs in single women, and is most common between the age of 20 and the period of cessation of the menses, and it has been observed to occur soon after marriage. The characteristic symptoms are an opaque white discharge, and distressing pain in the region of the pubes and sacrum, "aggravated by any circumstance which causes pressure centrally in the pelvis:" there is pain also during intercourse. The constitutional symptoms are slight, and frequently the menstruation is not deranged. When neglected the affection degenerates into inveterate leucorrhœa, and may lead to excessive anæmia. The *diagnosis* of the disease is derived from discovering pain of the cervix on pressure, and the opaque nature of the discharge, which is quite white or grey, and easily miscible (its test) with water. "Let it however be remembered, that this creamy discharge is rarely copious and free from admixture, except in rising from bed in the morning, the time which ought to be chosen for examination." *Treatment*.—In severe cases local bleeding is required, while in those of a slighter character, baths and tepid anodyne injections suffice: the poppy hip-bath used for an hour twice a day is especially useful. Aperients should be given, and sometimes anodynes or suppositories are needed, to allay the irritation of the bladder, which also occasionally requires the use of the catheter.

IX. DISORDERS ATTENDANT ON THE DECLINE OF MENSTRUATION.

Dr. Ashwell considers that the opinion is too generally entertained, that the decline of this function must necessarily be attended with illness: doubtless, owing to the faulty state of the physical education of females, and to the evil influences they are exposed to in modern society, the ill effects at this epoch are frequent enough. In some cases, however, the health becomes improved and not deteriorated. The age at which the cessation occurs varies: generally it does so between 47 and 50, sometimes at 45, or in a few cases as early as 30 or between 30 and 40. In some, the change is

completed in a few months, while in others, years are occupied. The author arranges the morbid affections which result in the order of their frequency.

1. *Functional Derangements of the Brain and Nervous System.*—These are the most frequent results; indeed, hysterical and nervous symptoms so frequently accompany this change, as to call for little attention; they however sometimes reach such a height as to verge on temporary insanity. Soothing measures are found best adapted to these cases, and those of an irritating character should especially be avoided.

2. *Increased Action and Congestion of various Organs* are next in frequency, and are far from being rare, especially in the plethoric and free livers: a tendency to fulness often continues long after the cessation is complete, several persons being then liable to hæmorrhagic diseases of the head and chest. Pain and various symptoms referable to a plethoric state of the vessels of the brain are here present, the diseases of the skin are very obstinate under these circumstances, and indeed any organ (especially the uterine) may be suffering from congestion or inflammation. In treating these affections we should be careful not to fall into the prevalent error of regarding them as the results of debility rather than plethora, for remedies exhibited under this idea not only may encrease the state of congestion of important organs, but may also lay the foundation for structural changes. Still we must be cautious in the use of antiphlogistics, for, if these be carried too far, anæmia will result. Thus a medium practice is the best: if there is plethora, small bleedings, aperients, and abstinence will be required. Issues and setons, formerly so frequently employed, are now rarely used. Local baths and friction are useful. Care must be taken not to confound the state of pregnancy with the cessation of the menses, or *vice versa*—errors easily made under some circumstances.

3. *Lesions of Structure and Malignant Disease.*—Dr. Ashwell doubts the propriety of the opinion, which connects the period of the cessation of the menses with the original production of organic disease of the breast and uterus; believing, however, that a latent tendency may then become developed, especially when the uterus is in a state of congestion, and means for its relief have been neglected. Frequent examinations of the suspected organs are essential to the formation of a satisfactory opinion.

In concluding our analysis of this work, we may again express our opinion that it is an excellent one, and calculated to be of great use to the young practitioner, especially as it is enriched (and not overburdened, as is too often the case) with a selection of illustrative cases, and a very useful collection of prescriptions. One of Dr. Ashwell's reasons for its publication is admirable. "I have long entertained the opinion, that practitioners who hold important public appointments are bound, so far as their sources of authentic information can be made subservient, to improve and encrease the common stock of professional knowledge." Would that more of the medical officers of large institutions would follow his example!

OFFICIAL REPORT ON THE MEDICAL TOPOGRAPHY AND CLIMATE OF CALCUTTA, WITH BRIEF NOTICES OF ITS PREVALENT DISEASES, ENDEMIC AND EPIDEMIC. By *James Ranald Martin*, Esq. Presidency Surgeon, and Surgeon to the Native Hospital. Printed by order of Government. 4to. Calcutta, 1839.

THE "Notes" on the Medical Topography of Calcutta were noticed in a former Number, and Mr. Martin, in his preface, states that, to this favourable mention, and that of Sir James Macgregor, is due the present enlarged Report, containing more than a third of matter entirely new.

From the preface also we learn, that to its author is due the comprehensive plan of calling on the medical services of all India for reports on the medical topography and climate of all the more important localities, and indeed of the country generally. This plan of Mr. Martin's, he states, "was carried into effect in 1835, through the direct act of the government, the medical board's opinions having afforded it but a very equivocal support."

Again, in 1838, it appears that Mr. Martin proposed to the same board to remodel the existing forms of hospital reports, which are now very defective, with a view to elucidate by medical statistics the important subjects of tropical climate, its diseases, and the results of treatment. "My plan," says Mr. Martin, "I regret to say, did not obtain the sanction of medical authority; and so this important matter remains, for the present at least, in abeyance."

The preface then concludes:—"There are two points which I have endeavoured to keep continually in mind—namely, the investigation of climate in its most extended sense, and secondly, its influence on military health; for it should never be forgotten here, however we may be circumstanced, that it is mainly for the care of the troops that medical officers are sent to India."

In a postscript we learn that the municipal committee, composed of the Honorable the Judges of the Supreme Court of Calcutta, the Lord Bishop of the Diocese, and several gentlemen, European and native, originated with Mr. Martin, and that he was a member of it. The report of this committee drawn up with singular ability by the chairman, the Honorable Sir John Peter Grant, and comprising 245 pages, is in our possession.

A glance at the improvements suggested by this committee will shew the extent of its labours, and the importance to the capital of British India of their being adopted—they are as follows:—

- 1st. "A new and complete system of drainage.
- 2nd. The more perfect ventilation of the city by the construction of new open streets and roads, and the removal of old buildings and walls.
- 3rd. The cleansing, clearing jungle, and levelling of ground in and about the city.
- 4th. Construction of large new tanks, and the supply of water for all purposes.
- 5th. Clearing and draining of the great salt water lake.
- 6th. Improved construction of the native habitations.
- 7th. Widening, paving and making streets and roads.
- 8th. Improvement of the public markets, &c. &c.
- 9th. Better regulation of the police, general and medical.

- 10th. Removal and regulation of burying grounds.
- 11th. The establishment of a great central hospital for the reception and cure of natives suffering from fever and other diseases incident to the climate, and the establishment also of dispensaries dependent on it.
- 12th. The various rents, taxes, assessments and tolls.
- 13th. The lottery for the improvement of Calcutta.
- 14th. The conservancy in all its parts.
- 15th. Suggestions for new modelling the police.
- 16th. Plan of taxation for perpetuating and carrying on the improvements of the city and its suburbs."

"The mere perusal," says Mr. Martin, "of the above abstract, will afford a sufficient coup d'œil of the actual condition and wants of the city." "That there are causes constantly in operation here, *and which may be easily removed*, that tend to produce great public unhappiness, by abridging both the usefulness and the term of life, any one may see; that it is the duty of the government—the only moving power in India—to obviate all these causes, no one can reasonably doubt."

Passing over the details of the medical topography of Calcutta, we come to the following observations, prefatory to a description of the physical climate of Bengal.

"Whoever considers climate, with reference to its vast importance to human welfare, must feel some degree of disappointment, if not astonishment, at the meagreness in which the advanced state of knowledge in the nineteenth century has yet left this most interesting branch of inquiry. One philosopher will view climate as any space distant from the equator and poles; another, as nothing more than a well arranged table of the winds, of the thermometric, barometric and hygrometric degrees; a third, as having reference solely to elevation above the mean level of the earth's surface; a fourth, as consisting only of the internal heat of the globe; while a fifth, supposed to be better informed than all the rest, pronounces climate to be influenced only by latitude and local elevation, and allows it to be but slightly affected by any other causes. We may, then, with some shew of reason exclaim with Dr. A. T. Thomson, what is climate?"

Mr. Martin considers that, in this inquiry, "much that is important may be done by a careful observation and comparison of facts, made at different times and places; for it is by such means that a science like that of climate can alone be perfected." * * * "The value of all scientific facts depends in a great measure on being comparable, and this in an especial manner applies to inquiries relating to climate and medical statistics. I am satisfied that, in a professional sense, it is impossible to take too extended a view of climate, and that he who succeeds best must follow the indication of Cabanis—*l'ensemble de toutes les circonstances naturelles et physiques, au milieu desquelles nous vivons dans chaque lieu*; for this much is certain, that the framers of elaborate tables of the winds and the degrees of the thermometer have as yet done little either to inform our minds or guide our inquiries."

After quoting the arrangement of Malte-Brun, and adding to it, the author states that, "by tracing these causes, and by uniting and arranging under general points of view, the results of particular local observations, we shall arrive at an approach to climatology, in some measure corresponding to the present state of the other sciences."

The next article is on the "Influence of the Hindu Superstition and

Morals on Health. It begins as follows:—"We have not to travel to the banks of the Ganges to learn that the uninstructed man cannot even read the true character of the Deity; that the works of Nature address their eloquent language to him in vain, that the destiny of man is obscurely beheld by him, and that it is only as he advances in knowledge that he becomes *capable* of receiving and comprehending divine truths, abandons ceremonies stained with blood, and tries to imitate the goodness which he then alone discerns in action all around him." The moral effects of caste are described by the author as follows:—"If we take a general survey of the institution of caste amongst the Hindus (and without doing so we can know nothing of the natives) we are inevitably led to the conclusion that, it wars with every passion of the human mind, good as well as evil, and that, being prejudicial to public happiness, it is eminently injurious to public health. In it we find none of the purifying influences of the Eleusinian rites of the Greeks, whereby both Isocrates, and Cicero in later times, considered that their morals and civilization were so much advanced." * * *

"On the contrary, in the Hindu act of devotion there is not a vestige of reference to the divine attributes, nor to moral duty. The Hindu rehearses in his mind the form of the God, his colour, the number of his heads, eyes, hands, &c. and nothing more; and he who preserves his caste need not disturb his mind on any other subject connected with moral or religious obligation. If there is any part of his conduct with which his religious ideas have no concern, it is his moral character."

The physical ills of caste are not less numerous or important. They comprise the early marriages, which Mr. Martin states to be "one of the most pervading injuries inflicted by caste on public health;" polygamy also "that source of a thousand evils; festivals of frequent recurrence, leading to every species of vice, exposing thousands to all the inclemencies of season, producing every variety of disease and misery, mental as well as bodily."

On diet Mr. Martin observes—"It has always appeared to me a great mistake to view the diet of the Bengalee *as prescribed by climate*: on the contrary, I believe it to be far below the standard required for his support under all the changes of his seasons: in the hot weather and rains it is insufficient to supply the great waste, and in the cold season its poverty is alike injurious to health."

"Whether the founders of the Hindu faith were aware of it or not is immaterial to the present inquiry; but there can be no question that by depressing all the physical energies, through a diet purely vegetable, they fastened with a stronger hand the moral bonds of Brahminical domination on the people."

The remarkable fact is there stated that, owing to the better food and clothing of the Mahomedan portion of the inhabitants of Calcutta, but one in 38½ die annually, whereas of the Hindus, the annual mortality is one in 17½.

Prefatory to an account of the institutions for the education of the natives, we have the following observations;—

"Two circumstances appear calculated more than all others to keep the people in their present state of moral degradation; the first and greatest is the *caste*; the second is the want of any national plan of education."

The extinguishing influence of caste has been elsewhere spoken of; and here it only remains to remark briefly on the other great evil—the absence of education.”

“In most European communities, education is a national affair—a part of the political system—and has for ages been subordinate, in the best regulated of them, to what is termed the law of society, and to that assemblage of opinions, customs, and habits which is not inappropriately called, by some writers, the positive morality of society, or the law of opinion. Now, here the people have never had any of these; and so long as they and education are wanting to the society of India, it cannot possess a shade of sovereign or independent quality, but must remain in its present anarchy. The people must look upon us as strangers, and we must look on them with the reserve of conquerors.”

On the prevention of disease, Mr. Martin observes:—

“The admirable rules prescribed by Dr. James Johnson regarding dress, food, drink, exercise, sleep, bathing, &c. &c. and the regulation of the passions, are well known; but perhaps better known than regarded: they are like the vital points in religion and morals—all men agree in them, yet how easily are they forgotten! In order to think seriously on health, most men require to suffer from disease: the lessons derived from such experience are longest remembered.”

“There is one circumstance which ought to be impressed every where on the public, and it is, that however useful medicine may be in moderate and judicious doses, under occasional circumstances of change of season, or during certain epidemics; it is yet more on the proper selection of localities, the avoidance of day and night exposure, and care in diet, exercise, clothing, &c., that disease is to be prevented, and not by a system of self-quackery, with calomel and other mercurial preparations, such as many persons pursue in this country to their great injury, for the removal of what they call ‘biliousness.’

Many is the strong habit I have seen impaired by this senseless custom: and I have known several lives lost, and others put in jeopardy, by the use of saline purgatives during seasons of cholera.”

“Another extensive source of disordered health I must here mention, as it has come frequently under my notice; I mean the long-continued use of aperient medicines containing the mercurial preparations. It is common for patients to obtain from their physicians aperient pills, for instance, containing some portion of calomel, or blue-pill. This may have been given with a particular view, or for an especial occasion only; but it often happens that the patient continues for months, and even for years, that which was intended to be used but for days, or weeks. The results are very lamentable—I have seen persons in a state of nervous irritability, bordering upon insanity, from this cause, with a subacute inflammation of the mucous digestive surface, and chronic pyalism—all resulting from the long-continued and frequently unconscious use of mercury.

One field officer used blue-pill and colocynth for two years and a half; and an American gentleman took the same preparation with ipecacuanha, during a voyage from a sister presidency to America, and back to Calcutta. It is needless to detail how ruined were the healths of both.”

On the physical management of European children in Calcutta, Mr. Martin observes—

“The diseases of childhood run their courses very mildly in Bengal, and, upon the whole, it cannot be said that, under proper management, the climate of Calcutta is unfavourable to infant health up to five or six years of age, when, however, the offspring of Europeans generally begin to shew the necessity for the change of climate, by out-growing their strength. This portion of medical

statistics, however, is quite as unsatisfactory as all that relates to the subject in India; but I believe the results of a close observation would afford corresponding facts to those obtained in France and England, viz. that the greater mortality exists under the extremes of temperature—the very colder, and the hotter months."

The remarkable fact is then stated, that " amongst the better classes of European adults in Calcutta the ratio of mortality is greater than that of infants in the proportion of five to one, while of the poor degenerate Portuguese, that of children exceeds adults in the ratio of four to one."

Fort William is stated, on the authority of Dr. Burke, to be one of the worst, if not the very worst, of the military stations in India for the soldiers' children, the annual mortality being 16.29 per cent.

Lind speaks of " child-bearing as peculiarly fatal " in his time, but it appears now to be quite the contrary; for, during sixteen years that Mr. Martin was familiar with the state of health of the better classes of Europeans, but one death occurred connected with parturition. The mortality spoken of by Lind, Mr. Martin ascribes to the management having, in the olden time, been left entirely to native nurses, whose ignorance is said to be dreadful in its consequences to all who venture to trust them.

On the subject of rearing children entirely in Bengal, Mr. Martin observes:—

" That it is impracticable on the ground of experience, for that after much care the third generation from unmixed European stock is nowhere to be found; so much for the question of European colonization, on which a great deal has been said and written here, without ever reflecting that Nature had already set her ban upon it."

We come next to a chapter " On the Mortality of the Native and Foreign Races "—a task of great labour and difficulty, owing to the neglect of medical statistics by the medical authorities in Bengal.

This subject Mr. Martin has repeatedly urged " in what he thought the right quarter, and in the most emphatic manner; but though his proposition met with no very flattering reception, he has yet the satisfaction to know that he has produced some action, tardy perhaps, yet such as will lead to some ultimate improvement."

" We are in India continually kept in mind of that law of our nature by which the activity of men decreases in the ratio of their senility, causing that inertness and disinclination from undertaking any thing, however excellent, of which they cannot be expected to see the end."

Prefatory to elaborate tables, and the comments upon them, Mr. Martin observes that—

" In any inquiry as to the duration of life, and the causes of mortality amongst the natives of Bengal, we must consider, not only that general climate and temperature have great influence upon the longevity of different races, by accelerating or retarding the development of the human system, but that along with the worst climates, all the institutions and habits of the Bengalees tend powerfully to abbreviate the term of life: their premature decay is in perfect accordance with their early and forced development."

" The law of correspondence of the period of puberty with the whole term of life is subject to few exceptions, and has been well expressed by Lord Bacon in

his *Historia Vitæ et Mortis*, by 'Natures's finishing her periods in larger circles.'"

By a table, at page 168, we find the annual deaths in Calcutta as follows:—

English and Eurasians	1 in 28
Portuguese	1 in 8
Mahomedans, Moguls and Arabs	1 in 36
Hindus of various races	1 in 16
Armenians	1 in 25
Native Christians	1 in 14

After a commentary on the above table, Mr. Martin observes that, "so injurious is the climate of Bengal Proper to the Hindu soldiery of the army, in comparison with their own climate of the upper provinces, that, although only one-fourth of the troops are stationed in Bengal, the deaths of that fourth are more than a moiety of the whole mortality."

"That it was not less fatal to their Mahomedan predecessors of the Mogul dynasty is evident from the following translation of Gladwin, from the Persian:—In former reigns the climate of Bengal, on account of the inclemency of the air and water, was deemed inimical to the constitution of Moghuls and other foreigners, and only those officers who laboured under the royal displeasure were stationed there; and this fertile soil, which enjoys a perpetual Spring, was considered a strong prison, a land of spectres, the seat of disease, and the mansion of death."

The average mortality of the European soldiery in Fort William is stated in a table, for 20 years, at $76\frac{1}{2}$ per thousand of strength; but Mr. Martin thinks that, including invalids who die within a year of their departure from India, and the correction of other errors, the actual mortality will approach 90 per thousand.

A table is then given to shew that in India, as elsewhere, age materially influences mortality, the annual ratio per thousand of colonels being 59—4, while that of ensigns is but 23—4.

A series of tables is then given to shew the influence of season on the mortality of both natives and Europeans. They all agree in proving that the most fatal period of the year is from September to January inclusive; November being the month in which the greatest number of deaths occurred from ordinary endemic disease, while May is found to be "the worst of the cholera months."

The next article is on the epidemic disease of Calcutta.

"I know no branch of medical inquiry more interesting than the history of epidemics, or one that would prove more useful to practitioners in whatever climate. How true it was, as declared by Sydenham (and it unhappily continues so to this day) that no one has treated this great question 'in proportion to the dignity of the subject.'"

"A history of our local epidemics would be of great value, as enabling us to trace their connexion with changes of climate and condition of the surrounding localities, or with social conditions of the people, both European and Native; and had such an history existed, it would have helped to an earlier establishment of general principles, and a rational plan of treating our fevers especially; for, though all the epidemics within my personal recollection (and there is scarcely a year we have not one in some form) differ essentially from the ordinary endemics of the country, still, there will be found in most of them, so

much of the savour of the soil, if I may be allowed the expression, as to render a knowledge of their history and treatment an object of no mean importance."

Mr. Martin then goes on to state that "endemics are very often the parent stock upon which epidemics are engrafted;" but that our means of prevention apply equally to both, inasmuch as each "are found to *fasten* with *peculiar severity*, and remain longest in such localities as are neglected."

CHOLERA.

"It is impossible to say any thing satisfactory on a disease, which would seem every year to become a greater source of difficulty to medicine. In the stage of collapse it has too often proved to physicians what traumatic tetanus is to surgeons, a disease, according to Hennen, which, once fully formed, tended more to shew him what he could not trust to, than what he could place the smallest reliance on. My notices of cholera, then, will comprise merely such desultory observations respecting the local history of the disease and its treatment, as my personal experience in various parts of India and Ava enables me to offer; for, as to its remote cause, little or nothing is known: like the pestilences of the fifth century before the Christian era, it has in a manner travelled up and down over the habitable world, returning often to the same place after a certain interval; pausing sometimes in its fury and appearing to sleep, but again breaking out on some point or other within its range, till, at the end of its appointed period, it disappears—I fear we cannot yet say—altogether. The first impression of the morbid causes would appear to be made on the system of organic nerves and their functions; for almost immediately we have the vital actions of circulation, respiration, the generation of heat, and secretion, conspicuously disordered, and that probably through some unknown changes in the electric condition of the atmosphere."

"When I first entered on military practice in 1818, the disease had some marked points of difference in the symptoms and in the means used to combat them, from those of more recent visitations of the epidemic. Formerly, simple venous congestion of the most aggravated nature seemed to form the most essential feature in the disease; and the spasm, which was of a clonic character, could be referred to the oppression of the nervous energy following on concentrated cerebral and spinal congestion. It is on the supposition of the condition stated forming the leading feature of the disease in former times, and of the organic nervous function being less involved, that I would account for the efficacy of blood-letting then; for latterly, there seems a depression of the vital actions, which has greatly embarrassed our treatment, and deprived us altogether of the former great resource, blood-letting."

To illustrate the difference here spoken of, Mr. Martin states the cases of two men whom he treated very early in the history of the epidemic in Bengal, and in his own practice;—one was that of a soldier of the 59th Regiment, in whom the spasm was so severe that it required four men to hold him down. "He was bled profusely, and in a few hours he recovered." The other case took place some years later in the Governor-general's body-guard of cavalry.

"I found that during the night he had been drained of all the fluid portion

of his blood; his appearance was surprisingly altered. The respiration was oppressed, the countenance sunk and livid, the circulation flagging in the extremities. I opened a vein in each arm, but it was long ere I could obtain any thing but a trickling of dark treacly matter; at length the blood flowed, and by degrees its darkness was exchanged for the hue of nature. The man (an European), though not robust, was bled largely, and he, whom but a moment before I thought a dying man, stood up and exclaimed, '*Sir, you have made a new man of me.*' How surprising to find that a few years more, and the same treatment would, within the same time, have proved as certainly fatal. To appearance, we have the same symptoms, in the same order; but these signs are fallacious; and the treatment which proved most successful if used early in the disease, during 1818—22, no man will now dare to put in practice:—why is this? Is it that in the more recent visitations of the epidemic, we have, from its very onset, a greater depression of the organic nervous energy than was observable during its earlier history? I think so, and that such depression constitutes the chief, if not the entire difference now-a-days."

"Since the first outbreak of the epidemic in Bengal, it has spread westward, and over the nations of Europe and of America; yet, on a careful review of its history in all these countries, it does not appear that any additions whatever have been made, either to the Indian pathology or treatment of cholera. I do not make this assertion in disparagement; far from it, but to shew the great difficulties of these questions."

"Of the pathological state which actually constitutes the disease, we shall probably never know much. There is, in rapidly fatal cases, a great exhaustion of the power of generating heat; the air expired from the lungs becomes progressively colder; and so do all parts of the body, until they are merged in that of death; but these and the other destroying states already mentioned leave no traces behind."

"In protracted cases again, congestions, and even inflammations of various organs are frequently discernible after death; but these form only consecutive, or superadded events in the morbid chain, like the final oppression of the cerebral system of nerves, which occasionally become obtunded through the stagnation of the circulation, and consequent want of red blood. In the last stage of acute seizures, however, it is surprising how some retain their mental integrity to within a few minutes of dissolution, while others are for hours narcotized by the disease."

"Here, as in all epidemics, it may be laid down as certain, that whatever tends to disturb the balance of health, may lead to an attack of the prevailing disease. Hence, it is to the observance of preventive rules that communities will always owe most."

"The avoidance of day and night exposure, and, in short, all those rules applicable to ordinary prevention should here be rigorously attended to. The diet at such seasons should be nutritious, dry, and moderately stimulant, and all food should be easy of digestion. I have known several instances wherein the use of the shell and sable fishes of this river have led to an attack of cholera, apparently through their difficulty of being well digested. Cold ascendent fruits and vegetables ought likewise to be avoided. An empty state of the vessels, hunger, thirst, fatigue, and debility, give rise to activity in the process of absorption, and this would appear to explain how persons enfeebled by debauchery and loss of natural rest are more liable to be affected by diseases, whether epidemic or contagious. It is thus also that fear would seem to act. Another caution applies to the use of purgatives, and especially those of a cold saline nature: many cases have occurred within my recollection of the disease being thus insinuated and mistaken for the action of salts, until the speedy approach of the stage of collapse made the real nature of the case but too apparent. When purgatives must be used in such seasons, they should be of a warm

aromatic nature, and it ought to be a fixed rule never to exhibit them over night, that being the ordinary time of invasion. It must not be forgotten too, that fevers, and bowel complaints especially, are very apt, under the epidemic influence to merge in cholera."

TREATMENT.

"Details of medical management can have no place in a work of this description; but this much must be evident, viz. that in a disease, acute beyond all others, treatment, to be successful, ought to be applied at the onset; life may then be saved in a very large proportion; but, if unhappily the first few hours are lost, it too often follows that unavailing regrets take the place of hope, and that the best efforts of the physician are set at naught.

I have stated that the plan by copious bloodletting, followed by full doses of calomel and opium, was that found most successful on my arrival in the country, in resisting the onset of the disease; and when re-action took place, topical bleeding was used to relieve local affections, and repeated mercurial purgatives completed the cure."

"When, however, no such happy condition was present, but the opposite one of collapse of all the vital powers occurred, we were then, as now, very much wanting in an available resource, notwithstanding the free use of every mode of stimulation."

"It is very true that we occasionally see surprising instances of recovery from apparently hopeless sinking of the nervous and vascular energies; but candour will oblige all men to avow that, though such cases are saved by the assiduous exhibition of stimuli, yet it is equally true that the majority of them die now, as they did in our earlier experience; and I repeat that our European and Transatlantic brethren have not helped us through any of our difficulties in the management of this stage of the disease."

"A full dose of calomel with opium will save life in a majority of cases if used early;—and this fact ought to prove a great encouragement to all who will think on the subject as it deserves.

It will be seen then, that excepting the blood-letting, which we have been obliged latterly to abandon as deadly, our practice remains much the same it was at the commencement of the disease in 1817:—that is, the stimulating plan of treatment, first adopted here, seems to have now become the general one in all countries."

"It appears that in the Calcutta general hospital, out of 803 Europeans, admitted in all stages of the disease, 372 died: at Madras 23 per cent. of the Europeans and 45 per cent. of the natives died; while in England, 38·5 per cent. died; in Prussia 58·6; in France 100,000 out of the entire population. March, April and May are the months in which the disease generally prevails, but May is much the most fatal.

In England half the deaths occurred in the first 24 hours, shewing the urgent necessity of early treatment in this disease; for, what is to be done must be on the instant. In the epidemic visitation of 1838 in Calcutta, the deaths that I witnessed took place from two to twelve hours from my first seeing the sufferers. Here there was time—every thing in cholera—irrevocably lost."

Passing over the history of such other epidemics as came under Mr. Martin's personal observation, we come to the endemic diseases of Calcutta, and first, of Intermittent Fever.

It appears that, owing to the "hitherto gradual and almost imperceptible improvements of the ill-chosen locality, intermittent fever has become a mild and infrequent form of disease in modern Calcutta, while in former times it constituted far the most severe and fatal class of fever; the cold stage, according to the older writers, lasting "twelve hours."

"The fevers here mentioned would seem to have possessed the malignant character of the *febres intermittentes algidæ*, described by Torti, in which the power of generating heat was so impaired that the patient died in the cold stage at the end of two or three accessions."

TREATMENT.

"With exception to the cases of some delicate females, I do not recollect any that resisted the ordinary management by general or local blood-letting, according to the severity of complication; purgatives and sudorifica, with quinine during the intermissions."

Mr. Martin's experience does not enable him to speak favorably of bleeding in the cold stage of intermittent. On the contrary he recommends that, "when general blood-letting is had recourse to in the treatment of intermittent fever, whether simple or complicated, it should, as in the case of all other fevers, be performed at the very onset of the stage of re-action."

"Practised at this period, it will lessen arterial action, relieve venous congestion, usher in the sweating stage, and thereby pave the way for quinine, purgatives and sudorifica, on which the prevention of recurrence must depend."

"In feeble habits, or with persons who have resided long in India, local depletion, by leeches, will answer every purpose."

REMITTENT FEVER.

"In noticing the more ordinary fevers of Calcutta, whether endemic or epidemic, the first observations that force themselves are, their great differences as to intensity, in the present, as compared to former times; and secondly, the causes of this difference."

"The earliest account we have of the state of public health, and of the period of greatest mortality, in Calcutta, is that already quoted from Captain Hamilton, wherein he mentions 460 burials out of 1200 British inhabitants, from August till the ensuing January: this was between the years 1688-1723."

Notices are then given from Clark, Stavorinus, Ives, Bogue and others, of the fatal nature of the fevers of Calcutta in their days.

"That a scorbutic taint was universal in those times may, I believe, be admitted; and this circumstance will readily account for the general term 'putrid,' as applied by the older writers to the endemic fevers and dysenteries: this unfavorable complication will likewise go far to account for the mortality."

"Of just or useful comparison therefore, between the results of former and recent general hospital management, there can be little or none; but, I think, this much may be allowed in favor of the modern plan; that, in consequence of our greater freedom of depletory means, by blood-letting especially, we have fewer of the sequelæ of fevers, viz. enlarged liver and spleen, than existed formerly; for, in the military hospital at Madras, in 1782, we find by a monthly report of Mr. Paisley, the surgeon, that there were then in the house—

Veneræals	50
Quotidian remittents	2
Simple bilious fevers	30
Bilious fevers, with visceral obstructions	15
Simple fluxes	20
Liver fluxes, and fluxes from visceral obstructions	98
Chronic visceral obstructions from impaired habits	69

Total.. .. 284

"Thus it appears, that out of 284 cases in hospital, 182 laboured under some form of visceral obstruction; that is organic disease of the liver or spleen, or both, in a more or less acute form, and in either case rendering death more or less remote, a necessary result.

It is here then, and not in the comparison of actual mortality within the wards, that our hospital management contrasts favorably with that of the olden times."

"If tropical fever and dysentery were always simple morbid actions, no doubt, as recommended by some, bleeding and purging might in general prove adequate to the cure; but unfortunately in both cases, we seldom find this unmixed condition to hold in actual practice in Bengal, where we have in our fevers continually to combat dangerous abdominal complications, with the addition, in the hot season, of the cerebro-spinal—all demanding a more or less complex and careful treatment—a speedy unlocking of all the secretions and excretions, which the most ample experience proves that bleeding and purging *alone* will not effect. Yet bleeding, here, as in dysentery, is the standard remedy, subject to age, constitution and length of residence in India. It precedes all other management in the order of time, and in point of importance. I believe this to be the general view taken of it by the practitioners of this city; and it is but common justice to say, that the value of this most powerful of all means was first emphatically urged on the Indian surgeon by Dr. James Johnson: it is to him we owe that blood-letting has become a systematic part of our treatment. Of the several valuable authors besides, who have since followed him, and helped to fix the professional attention, I need say nothing."

"Subject only to the limitations already stated, bleeding—early and copious bleeding, and practised at the very onset of the stage of re-action—is very generally necessary in the severer forms of Bengal remittent fever; then, full doses of calomel with sudorifics, short of producing salivation, with saline purgatives in the intervals. If the disease does not now yield, but on the contrary, if the paroxysms recur at shorter intervals, and with increased severity, leaving but imperfect remissions—then there is imminent danger, and inflammation or acute congestion in some important abdominal or other organ, may be more than suspected. For this, in addition to topical bleeding and cold to the head, when the seat of disease, mercury in small repeated doses, with antimonials, must be given so as mildly to affect the system: it is the only known means of saving the patient, by anticipating the destruction of some organ essential to life; it here becomes, in the apt words of Dr. Robert Jackson, a remedy of necessity."

"Where the remissions, on the other hand, are well marked, quinine should be given in full doses, without waiting for every thing. Some practitioners recommend that, before this drug is used, we obtain previously a clean tongue, natural secretions, and the absence of all heat of skin or local affection. I believe this to be a very dangerous practice: if we are to wait for every thing, we shall often wait too long, or till it is too late. I have always administered quinine in the more favourable cases now stated, in disregard of certain local abdominal complications, (those of the head should in general exclude it,) believing that if I arrest the paroxysm, I do greatly more towards the cure at large, than quinine can possibly do of harm to the local affection—the treatment of which by local depletion and counter-irritants is not interfered with by this means: again, all tenderness on pressure or local pain, does not, in the case here stated, necessarily constitute inflammation."

"Almost all our complications in the fevers of Bengal are abdominal, whether these be of an inflammatory nature, congestive, or of mere irritation; and this would seem to be the cause of the apparent prostration, with tendency to collapse, so common especially during the rainy season with us; for even within a few hours, as contrasted with similar affections of the head and chest,

there exists here an oppression of the vital functions, alarming to the stranger physician."

"The prostration produced by a violent blow on the abdomen more nearly resembles the febrile collapse than any other morbid condition with which I am acquainted; it is probable that both depend on the disturbed function of the great sympathetic—the powerful though silent source of many symptoms known to us only by their effects."

"This tendency to sinking is the reason why our measures of cure must be so guarded as to the time of using them;—for there is no country in the fevers of which more regard must be paid to the stage of disease for applying remedies, especially blood-letting, than in those of Bengal; what was a saving means at the commencement of the paroxysm, is as surely destructive at the end of it."

"I cannot conclude these cursory remarks without adverting to the importance of the management of convalescence from fever—not the least serious of the duties imposed on the Indian physician. In all cases of recovery from fever, but especially in those wherein the complications have been severe, or where important organs have been affected in the course of the fever, or as a sequel to it, it is impossible to be too careful in the diet, and in attention to the nature and activity of the secretions;—and this vigilance must not be relaxed until perfect health is re-established. How often do we see patients who have been well enough treated during the acute disease, but on whom the neglect of this rule of practice entails enlargement of the liver or spleen, or other visceral engorgements, requiring a protracted sea voyage, or even a return to Europe at great inconvenience. This is a subject that should always be present to the mind of those who have the management of military hospitals wherein the perfect re-establishment of the soldier's health, before his return to barracks, should be a maxim never to be swerved from."

"This is not the place for reviewing medical books, or laying down general rules of practice; but it cannot be too much or too often impressed on the Indian surgeon, that it is on his careful attention to the phenomena of fever that nine-tenths of his usefulness depend. I have here attempted an outline of the treatment of the endemic fever of Calcutta, and of Bengal generally: it will be found to correspond in principle with that of the endemic fevers—the bilious remittents of the world—whether east or west:—they are all fevers of locality, and do not by any means differ so much as medical writers of partial views and partial experience would have us believe:—their supposed differences, or nosological divisions, are more frequently the work of man than of nature: they may, and do differ in degree of intensity; but their essential phenomena, and the organs affected in their progress, so as to endanger, or ultimately destroy life, are the same; and so likewise are the essential parts of their treatment."

DYSENTERY.

"If dysentery were a disease of uniform character, and having an uniform cause and seat, then it might, perhaps, always be treated after an uniform plan; but a very slender experience of this disease, especially as it prevails within the tropics, or even within the British Islands, shews this not to be very generally the case; for although some portion of the larger bowel is universally implicated, yet, either from the first, or during the progress of the disease,—for we cannot often say which—the lesser bowel—the liver, the spleen, the pancreas, and mesentery, become also the frequent seats of morbid action, so as to modify the disease, and likewise its right treatment."

"In the dysentery of Ireland, Dr. O'Brien found 'the liver diseased in one-half of the dissections, the spleen in one-fourth, the small intestines in two-thirds,

and the colon and rectum in all.' The pathology of our dysenteries, whether in Southern or Northern India, and as given by the best authors, sufficiently establishes that morbid action in this formidable disease is not confined here, any more than in Europe, to the course of the large intestine, but that all or most of the associated organs are found after death to be more or less deeply implicated, just in proportion to the extent and severity of the symptoms during life."

"It appears to me that to a want of just consideration of these inevitable pathological complications must we ascribe the system of exclusive treatment so much reprehended by the author quoted at the head of this article, and the successive abandonment also, by the surgeons of fleets and armies, of every exclusive plan hitherto proposed, almost as soon as it has been tried."

In this article, as in that on remittent fever, Mr. Martin gives a catalogue-raisonné of the treatment of these diseases as they prevail both in Europe and within the Tropics, by more than twenty of the best known authors, exhibiting some considerable variety in practice it is certain, but within later years coming to a close agreement on the general principles of management.

"It only remains to notice the prevailing treatment of the dysentery of Bengal, amongst the more experienced practitioners at the Presidency, and this I shall insert in the order of importance. Blood-letting, general and local, as first practically urged in the dysentery of India by Dr. James Johnson, takes the lead, and has done so for many years: it is the standard remedy; and I believe that when the subject comes early and freely under this treatment, and that the case is not complicated with hepatic congestion or other actual disease, little else than a few aperients and sudorifics will be required for the cure; but, as in most cases of this formidable disease as it appears within the tropics, the diseased state of the large intestines is essentially mixed up with general abdominal complications, other and important means follow the bleeding; and of the first are those which act powerfully on all the secreting organs, internal and external—such as calomel in full doses with antimony, or with ipecacuanha, followed by laxatives, sudorifics, warm baths, enemas and other minor adjuvantia. I believe this to be the general course here, and I have seldom seen calomel carried the length of salivation, neither do I consider this degree of effect necessary to the cure."

"The late Mr. Twining, in his clinical work, advocates the use of simple ipecacuanha powder, combined with the bitter extracts, which plan he described as very successful. I am not aware that this system has been followed by any of the other practitioners of the general hospital, where Mr. Twining officiated for several years; neither would it appear to be successfully imitated in the provinces."

"Dr. Macnab, in a very judicious and practical report on the dysentery of the native soldiery of Hindustan, when serving in Bengal, says, that 'blue pill with ipecacuanha and gentian proved a complete failure,' as has generally been the case in my trials of it. Indeed I much suspect that Mr. Twining overrated the value of this favorite remedy, and that he may also have miscalculated the anti-emetic properties of the gentian."

"Ipecacuanha has been a favorite remedy in the south of India for upwards of forty years past. Dr. Whitelaw Ainslie, after an experience of thirty years, and an extensive practice amongst all classes of Europeans, says of this drug, that it 'has no equal in simple dysentery, that is, dysentery not accompanied with hepatic derangement; it has the happiest effects.' This is an observation of great practical importance, and, I think, impresses a just discrimination in the use of this valuable remedy. In speaking of an experience now of twenty years, and an extensive range of observation of the disease as it occurs in hos-

pitals and private practice in this city, also as it appeared amongst the troops serving in the unhealthy provinces of Orissa and Guudwasah, and in the army at Rangoon and Upper Ava, I should say, with Dr. Ainslie, that it is alone in *simple uncomplicated* dysentery that ipecacuanha shows its best effects administered as an *exclusive* remedy; that is, after bleeding and moderate purging."

"In the hepatic form of dysentery—no uncommon complication in Bengal, especially during the cold season—calomel is absolutely necessary to the cure. I lately treated for this form of the disease a gentleman who had suffered much from the Batavian fever contracted at the capture of Java: he was bled generally and by leeches, followed by purgatives and sudorifics; but no amendment took place, and nothing was voided but mucus and blood. Two full doses of calomel and antimony were then given, which produced copious biliary discharges and immediate relief: a few doses of blue-pill with ipecacuanha, and purgatives, concluded the treatment. There existed in this case no enlargement of the liver, nor uneasiness on pressure; but there was a total absence of biliary secretion; and until that was restored, the other treatment afforded no relief. Another case of very severe hepatic dysentery requiring measures of great activity, was marred in convalescence by soup taken contrary to my directions: the liver became painful as ever, and the dysentery returned, requiring a repetition of general and local blood-letting, mercury, &c., and that under circumstances of greatly reduced strength. I have seen many cases in which morbid action seemed co-existent in the liver and cæcum, and I would beg to call attention to the subject. I believe that cases of hepatic complication, treated without mercury, frequently terminate in inflammation and chronic abscess of this organ."

The last article but one is on the inflammation of the parenchymatous structure of the liver.

"This is the most dangerous disease I am acquainted with, because of its insidiousness, and the total absence of urgent symptoms: the process which leads to destruction is here silent and rapid. It has not been sufficiently dwelt on by writers on the diseases of our climate. It chiefly attacks the feeble of constitution, the lax of fibre and fair of complexion: it often terminates the career of the old Indian."

"Whether existing in the older resident in Bengal or the new comer, it is generally a disease of the cold season, and caused by night exposure;—in short, by any means that determine powerfully from the surface to the internal organs. I have seen cases where it was caused by the chilling thorough draughts of our northern entrances to the Calcutta houses, after leaving a crowded room; and others, where it was occasioned by exposure before day-light for the purpose of hunting."

"The disease is sometimes preceded by a perceptible falling off in the general health, such as, some degree of emaciation, dry cough and embarrassed respiration, loss of appetite, and sallowness of complexion; but it more generally comes on in the midst of apparent health. There is a general feeling of abdominal uneasiness, but more particularly of the epigastric region and that of the liver, with some degree of fever, preceded by slight rigor or ague; but all these are so trifling as too often to attract but little of the patient's attention. Perhaps he applies to his physician on account of slight *diarrhæa*, supposed to be the result of error in diet: medicine affords some relief, and he proceeds in his ordinary occupation for days, and when the action is more chronic, for weeks, though under great depression of the mental and corporeal energies; till at length, his altered appearance, hacking cough, permanently dry skin, invincibly rough furred tongue, and morbid taste, attract some more serious notice on his own part, or that of his family. The real nature of the disease may still remain a secret to both patient and physician; and it may not be till a marked succession of rigors, or profuse and clammy perspiration announce in audible terms the

formation of abscess, that either party becomes awake to the actual danger. A sense of uneasy feeling may or may not exist in the region of the liver, according as the disease is centred more or less deep in its substance, or in its upper convex surface; when the former exists, the symptoms are more than usually obscure and insidious; in the latter case, they are very acute."

"When on the other hand, the left lobe is the seat of morbid action, it is easy of detection to a physician, though not so to the patient.

"I should say that diarrhoea, followed by slight fever; the peculiar state of the skin; the tongue having the roughness of a coarse file; with adherent coating, together with the local uneasiness already described; cough, and high-coloured urine, ought immediately to warn the physician of the suppurative inflammation which leads to liver abscess. The diagnosis will receive material assistance from the external examination of the chest, especially when the upper convex surface of the liver is the seat of disease."

"Such are the symptoms and most uniform succession of events: they should always meet with the strictest attention, and the most prompt and decided treatment."

"I will give a case in illustration. Last cold season a medical friend called at my house, and just as he was quitting, he said, incidentally, that he had a 'pain in his back, like lumbago.' On examination, I found his liver seriously involved in disease, and that it had been so for three days, during which he had been going about as usual, living in his ordinary manner, and using the cold bath daily. All he had noticed was a slight shivering three nights previously, followed by feverishness and pain of the back; but he considered his symptoms of so little moment that his mention of them was obtained only through interrogation."

"He was young and robust of habit, so that with the loss of about eighty ounces of blood within twenty-four hours, his symptoms yielded:—but I think he recovered with difficulty: a few hours more, and it would have been too late. The above is an extreme case of the kind, the inflammation having been of a very acute character; but it is important, as shewing how very insidious are the symptoms, and how little they possess of the urgency to cause a salutary alarm in the patient's mind. It is always thus when the inflammation is centred in the parenchymatous structure of the liver; and hence the absence of acute pain, and those urgent symptoms which characterize inflammatory states of the peritoneal covering of the gland, which always give ample warning."

"However long the disease may have existed, provided there be no symptoms of suppuration, general bleeding, copious in relation to age, health, and length of residence in India, must be instantly had recourse to, and the measure of depletion should be the sense of general relief, *with softening of the skin*. These are the only safe criterions of adequate loss of blood, and it should be continually held in recollection, that suppurative inflammation of the most deadly character is present, and that consequently there is no time to be lost. After the bleeding, calomel and antimony should be exhibited every four hours, with occasional smart purgatives in the intervals, until the system is brought mildly under the influence of mercury: leeches and blisters are of course useful, but the latter ought not to be applied till a powerful impression has been made on the disease. The diet, during the progress of treatment, and for a long time after, should be of the very sparest, such as thin sago or arrow-root. On a plan of cure such as this, I have seen cases of a very unpromising appearance end in health. Occasionally this has been finally effected by the steady use of the nitro-muriatic acid bath, persisted in for a month or six weeks. One error seems very general respecting this disease, namely, its supposed infrequency in Bengal; but so much am I satisfied of the contrary that, taking the idiopathic cases of it, and those that form the complications with, or sequels to fevers and

dysentery, the sum total would form a respectable item in our bills of mortality ; indeed the statistical tables furnished in this work prove it."

The last article is on Neuralgia.

" Neuralgic affections, and especially the *tic douloureux*, prevail endemically in Bengal. We have here 'the true tic'—a terrible disease, that strikes with the violence and suddenness of lightning—the torture of which no language can describe.

" In such a disease no man can remain an unconcerned spectator ; and with all our sympathies aroused, we have often to regret the inertness of remedies the most powerful in repute, such as tonics of all kinds, occasional purgatives, as general measures, and veratria, ice, and acupuncture, as local means."

" Dr. Elliotson assures us, that he has never seen one case of neuralgia referrible to disorder of the digestive organs, and it may be so in England ; but I must say that, till my attention was drawn forcibly to this subject by Sir Charles Bell, I had no great reason to congratulate myself on my success against the tic of Bengal."

Mr. Martin, after quoting Sir Charles Bell, goes on to state his belief, that disorder of the digestive organs is, in Bengal at least, one of frequent influence.

" That such is a common source in the neuralgic affections of this climate, there can be no doubt ; and acting on that impression, I have cured a great number of cases of the severest forms (*tic* especially) in which all other remedies, general and local, had failed. I allude to one case especially, that of a lady who had suffered for years, and used a variety of means under direction of the late Mr. Twining, who at last directed the removal of the teeth of the side affected ; but which was not done. Her agony used to last for a fortnight together, so as nearly to deprive her of reason. The purgative plan pursued for two months removed the pain ; and for three years she has had no return. I could add many similar cases to prove the general influence of intestinal irritation on the disease in question. No doubt cases may occasionally occur, where the plan here recommended, and all others, will fail of doing good ; but such should not discourage us. I have succeeded by combining the purgative and tonic plans ; indeed the first, pursued in the moderate way stated, interferes with no other measures of cure."

In the above analysis we have avoided all comments, not considering ourselves justified in questioning any of the opinions and practices of a gentleman, whose talents and opportunities are entitled to so much respect. The materials of this report are, indeed, so valuable, that the senior Editor has added them to a new edition of his work on Tropical Climates, now in the press. This fact speaks for itself. But we cannot dismiss the "REPORT," without alluding to a circumstance which must have been highly gratifying to its author, and which, indeed, is creditable to the medical profession in India, as it shews the estimation in which it is there held by the public at large.

In January 1840, Mr. Martin, after a long residence in India, determined to husband out what health was spared, by a return to his native climate, and he is now settled in this metropolis, where we are sure many of his old Bengal friends and patients will find him out. The following extract from the Calcutta Courier, of January 15, 1840, will shew the estimation in which Mr. Martin was held by the inhabitants of that great Presidency.

" We are informed that the friends and patients of J. R. Martin. Esq., Pre-

sidency Surgeon, have determined to present to him on the occasion of his approaching departure from India a testimonial, expressive of the sentiments of regard and esteem which they entertain for his character. A preliminary meeting was held about three weeks ago at the Chambers of the Hon. Sir John Grant, when the subject was talked over, and it was resolved that a book should be circulated among Dr. Martin's patients now resident in Calcutta, for the purpose of affording them the opportunity of subscribing to the proposed testimonial. Nearly one hundred gentlemen have entered their names; and a meeting was held yesterday afternoon at the Town Hall, in order to consider and decide in what manner the sum subscribed, which is very handsome, should be appropriated so as best to accomplish the object of the subscribers. Sir John Grant was called to the Chair, and in his usual succinct and appropriate style explained the purpose of the meeting. The following resolutions were then proposed and unanimously sustained:—

1. Moved by J. F. Leith, Esq. and seconded by Colonel Taylor, that the amount of the Subscriptions be remitted to Messrs. Rundle and Bridge of London, subject to the order of Sir Charles D'Oyley, Bart., James Young, Esq. and J. A. Dorin, Esq. and any two of them, and that these gentlemen or any two of them be requested to put themselves in communication with Dr. Martin, and to order from the said Messrs. Rundle and Bridge, such a piece or service of plate as they or any two of them may determine upon in communication with Dr. M. to the value of the amount remitted.

2. Moved by J. Allan, Esq. and seconded by G. Henderson, Esq. that the money be forthwith collected on Mr. Leith's receipt as Honorary Secretary, and that the amount be invested in the purchase of Treasury Bill or Bills payable to Messrs. Rundle and Bridge.

3. Moved by the Rev. W. H. Meiklejohn and seconded by C. W. Smith, Esq., that a letter be presented to Dr. Martin expressive of the regard and esteem of his patients, to be signed by the Hon. Sir John Peter Grant as chairman of this meeting, and to have the names of the subscribers to the testimonial appended to it; and that the Hon. Sir J. P. Grant be requested to write the letter.

These resolutions having been carried unanimously, it was agreed that a deputation wait on Dr. Martin, to present the letter, and that it be composed of the following gentlemen:—

The Honorable Sir J. P. GRANT,
Colonel TAYLOR,
The Rev. Dr. CHARLES,
C. W. SMITH, Esq.
J. ALLAN, Esq. and
J. F. LEITH, Esq. *Hon. Secretary.*

and that the Secretary do write to Dr. M. to request him to fix an hour on Saturday next for receiving the deputation.

Thanks were then voted to Sir J. P. Grant for his kindness in presiding and for his conduct in the chair, and the meeting separated.

We beg to tender our cordial congratulations to Dr. Martin on his receiving such a flattering testimony of regard for his personal character, and esteem for his professional services. We should have been sorry, indeed, if a gentleman, who is so exemplary in all the relations of life, and who has long stood in the first rank of his profession, had been permitted to leave the scene of his labours, without having been furnished with some mark of the esteem in which he is held. It is not in India as elsewhere. From the perpetually shifting character of the European portion of the population, all that any man, however distinguished in his profession, can hope to enjoy is contemporaneous reputation; for a more lasting fame falls to the lot of those alone—how few they are!—whose names are linked to some valuable improvement in the financial administration of the country, or who have covered themselves with glory in the battle-field, and by

their martial achievements have added to the territorial possessions of the British Crown. Dr. Martin has, in his own walk, earned for himself a reputation, of which any one might be proud. His sterling integrity of character, his gentlemanlike propriety of conduct, his careful avoidance of professional bickerings, and his zealous devotion to the duties of his profession have been fully appreciated by his fellow-citizens; and we rejoice that he is to carry with him such a substantial token of the sentiments with which he is regarded by them. We sincerely hope that his projected voyage to Europe will contribute to the restoration of his health, and he has our best wishes that, in the future scene of his professional exertions, he may meet with the success of which he is so eminently deserving."

TESTIMONIAL.

Dear Sir,

Calcutta, Jan. 18th, 1840.

We, whose names are annexed to this letter, your friends and patients, while expressing our regret at losing the pleasure of your society and the benefits of your medical skill, and our still greater regret at your return to Great Britain being rendered necessary by the state of health, produced by your arduous services and your unremitting devotion to the duties of your profession, desire to present you with a lasting though inadequate memorial of our sincere regard for the excellencies of your personal character—our high estimate of your professional ability, and our gratitude for the benefit derived from its prompt, careful, and well-adapted exertion in the cases of ourselves and our friends.

We have for this purpose requested Sir Charles D'Oyly, Bart., James Young, Esq., and John Alexander Dorin, Esq., or any two of them who shall happen to be in London at the time of your arrival, to order a piece or pieces of plate to be made by Messrs. Rundell, Bridge, and Co. of London, of such description as you shall do us the favor to fix on, of the value of four hundred guineas, with a suitable inscription, of which we request your acceptance.

Signed by the Hon. Sir John Peter Grant, chairman of the meeting of the friends and patients of J. R. Martin, Esq. held at the Town Hall of Calcutta, in January, 1840.

Signed in their name and by their appointment.

JOHN PETER GRANT.

Then follow upwards of a hundred names of gentlemen of Calcutta.

MEDICAL STATISTICS.

I. STATISTICAL REPORTS OF THE HEALTH OF THE NAVY, FOR THE YEARS 1830, 1831, 1832, 1833, 1834, 1835, and 1836, IN THE SOUTH AMERICAN, WEST INDIAN, NORTH AMERICAN, MEDITERRANEAN AND PENINSULA COMMANDS. Ordered by the House of Commons to be Printed. 1840.

[Concluding Notice.]

II. SECOND ANNUAL REPORT OF THE REGISTRAR GENERAL OF BIRTHS, DEATHS, AND MARRIAGES, IN ENGLAND, WITH APPENDICES.

Our readers will do us the justice to admit, that we have encouraged, in every possible way, the publication of Statistical Reports. We have ever been convinced, and we still are so, of their utility, and, directly or indirectly, they will prove, we feel assured, the most powerful instrument we now possess for the advancement of our science.

It may be true that some enthusiasts push their application beyond its legitimate limits. But extravagance is always found to accompany the introduction of new means of eliciting truth, and cannot permanently derogate from their substantial value. It is the part of men of sense to accept all the good, and allow the evil, if such exist, to evaporate under the influence of reason and time. *They* may be trusted for setting these matters in their proper light, and establishing, at last, their real worth. We turn to the Reports before us.

1. HEALTH OF THE NAVY.

In our last Number, we *joined* our brave tars on the South American, West Indian, and North American Stations. We deferred to this occasion a trip with them to the Mediterranean. And who would not accompany them *there now*? Who would not sail with the gallant Napier, and encounter the Egyptian muskets and the Syrian dysentery, for the sake of such laurels as our blue-jackets have won for Old England at Beyroot, and Sidon, and Acre. Even while we landmen

“ Who lie at home at ease,”

are writing of the fevers and the fluxes that may seize on them, our countrymen are, we grieve to say, struck down by them, and the cannon of Acre are less feared than they.

MEDITERRANEAN AND PENINSULAR COMMANDS.

Year 1830.—This command embraces the seas, and shores of the Mediterranean, and Gibraltar. It extends over less space than some other commands, comprises fewer degrees of latitude, and is less exposed to extreme difference in degrees of temperature; it does not include more than 12 degrees, those

namely, from the 32d to the 44th north. As respects geographical position, therefore, the term "temperate" has been especially applied to it, and it has obtained high reputation for its influence on health. Yet the difference between the south and north shores, as regards temperature, is often great, especially in winter; the vicissitudes on the north coast are sudden, and violent.

The sirocco, south-east wind, blowing from the African continent, is singularly depressing, suddenly producing such languor, oppression, and feelings of feebleness, as neither its temperature, nor other appreciable quality can account for. It seldom continues to blow during many consecutive days. Its influence is most felt near the coast of Africa, but it is often powerful at Malta and Sicily, and sometimes reaches the north shores of the Mediterranean.

Malta, on account of its central situation, its arsenals, and the excellence of its harbours, is the principal naval station. During nine months of the year, the temperature is moderate, the weather being generally clear and fine, which, with the excellence of fresh meat, and vegetables procured there, produces highly beneficial effects on the health, comfort, and efficiency of the naval force employed in the Mediterranean. The other three months are hot, sometimes in a high degree; yet it has rarely proved very prejudicial.

Every anchorage in the circuit of the Mediterranean is visited, and more or less frequented, by ships of war. The parts most resorted to are Malta, Smyrna, various Greek, and Levantine islands, and Gibraltar, the extent to which they are occupied differing much at different periods.

The numerous ports, and places, embraced by this command differ greatly as to extent, exposure, and physical structure, and considerably in regard to external heat; they therefore act very differently on the health of ships' companies resorting to them; but, on the whole, and apart from some rare, but severe, epidemics which have affected some of them, their influence, combined with that of the sea climate, is very favourable.

The naval force employed on the coasts of Spain, and Portugal, is included in the Report for the Mediterranean. From the frequent interchange of portions of the force of the two squadrons, ships passing from the Peninsula to the Mediterranean, and *vice versa*, it was found impossible to separate them, so as to show satisfactorily the power of each on health.

The mean number employed in the united squadrons during the year was 6,576.

The health of the naval force, during the year, was high. From all causes there were 59 deaths, being at the rate of considerably less than one dead out of every hundred men employed. In three instances death resulted from external injuries at sea: so that the rate of mortality from disease was 8.5 per 1,000; from all causes, nine per 1,000 of force, abroad. But seven invalids from the station died in home hospitals, making a total of 66 deaths on, and from, the station, which is in the ratio of 10 dead out of every 1,000 employed, both abroad, and at home, during the year. Of the other fatal cases, 43 were on board, 16 in foreign hospitals.

The total number of cases treated was large, viz. 9,305, giving the very high ratio of 1415 per 1,000 of force. Out of the total number, 319 were sent to hospitals for treatment, and 189 were invalided, 99 from ships, and

90 from hospitals; the invalided were in the ratio of 28.7 per 1,000 of force. Thus it appears, that, deducting from the total number of cases, 319 sent to hospital, 43 terminating in death, and 99 in invaliding, on board, 8,844 were treated successfully in the ships where they occurred.

Of all forms of idiopathic fever, and probably some symptomatic affections classed with them, there were 709 cases; of which 628 were continued, 34 remittent, and 47 intermittent; of the first, seven terminated in death; of the second, five; of the third, none; of the first, 23 were sent to hospital; of the third, two; of the second, none. Three of the 25 cases sent to hospital terminated fatally. The vessel that suffered most severely was the *Mastiff*, a small surveying vessel, five deaths from eleven attacks occurring in her, four from remittent, and one from continued fever. She was employed on the coast of Thessaly. The people, as must be in such service, were much exposed to the weather in open boats; it rained heavily at times, the mean temperature being 76°. In such circumstances, and being, it is presumed, on a marshy coast, remittent fever was to be expected.

There were 227 cases of inflammation of the lungs, and their investing membranes; of which 88 were sent to hospital, four terminated fatally at sea, and 25, in a chronic condition, were invalided. The number affected was large, the relative loss by death small.

Inflammation of the lungs, and of their membranes, especially the interior, lining the air-passages, is rather a prevalent form of diseased action in the Mediterranean, for which the nature of the climate, in regard to temperature particularly, sufficiently accounts. It is, as has been stated, very variable, the changes, especially on the north coast, being sudden, and often violent. When the wind shifts from south to north, and *vice versa*, a fall or rise of 20 degrees in the thermometer will sometimes take place in a few hours.

However strange it may appear, it has been ascertained that bronchitis, which originates in the Mediterranean, and which often runs rapidly to a fatal termination there, may be arrested by moving the subject to England. A similar remark was made respecting the disease in South America.

Of less violent, but more dangerous diseases affecting the pulmonic tissue, there were considerable numbers. The phthisical cases, including hæmorrhages from the lungs, amounted to 53, viz. 36 of the former, and 17 of the latter. The latter is not necessarily a symptom of the former, nor of disorganization so great as to destroy life, though it certainly is so in a great many instances. It is therefore remarkable that none of these 17 cases proved fatal. It is also remarkable, that out of 36 cases designated phthisis, only four terminated fatally abroad, and one in hospital at home, though 14 were sent to hospitals abroad, and seven were invalided. There were two fatal cases of chronic catarrh in home hospitals; whether these cases ought to have been originally, and correctly, designated phthisis or not, cannot be ascertained; but even if they were, the loss from phthisis, particularly in relation to the number affected, would be singularly low. It can scarcely be doubted, that the term has been in some cases erroneously applied, and that less fatal diseases, such as chronic bronchitis, or pleuritis, have been mistaken for true tubercular phthisis; but be that as it might, it is certain that the loss from pulmonic disease was very small, and that the station maintained its reputation during the year, as far as the experience of the squadron was concerned.

Under the appellation of inflammation of the liver there were 75 cases, of which 17 were sent to hospitals for treatment, three were invalided, and two terminated fatally.

From all the cases of inflammatory disease of the alimentary organs, there was only one fatal in its termination.

There were 35 cases of small-pox in the Blonde, and one in the Wasp, at Malta, where the disease was prevalent among the citizens. In the Blonde it was generally mild, the eruption having little tendency to confluence, and there being little secondary fever. No one terminated fatally. It is stated that the vaccine cicatrix was well marked in all the crew, except six individuals, to whom the virus was immediately communicated. Besides these 35 cases, two were sent from the Asia to Malta hospital, both described as small-pox by the surgeon of the ship, and both fatal. One had, seemingly, had the small-pox previously, the other had apparently not been vaccinated.

The dysenteric cases amounted to 120; the most of them were slight, and easily cured. There were three fatal cases; three were sent to hospital, and one was invalided.

There were 145 cases of common cholera. Out of the whole number, one man died in his ship, the Blonde, and one was sent to hospital, the remaining 143 having recovered in their respective ships.

Though there were only four cases of delirium tremens, two terminated fatally.

Cases of venereal disease were numerous. There were 245 of syphilis, 291 of gonorrhoea and stricture, and 62 of bubo and swelled testicle. Though the last had not all a venereal origin, it is probable that the majority of them had. Glandular disease is common in the Mediterranean, and buboes frequently occur without any trace of a venereal cause.

The cases of common ulcer were also numerous, viz. 532; but they were all, except 11, sent to hospital for treatment, and four invalided, cured in the ships where they occurred.

The wounds, accidents, and external injuries of all kinds, amounted to the large number of 1,729 cases; of which 36 were sent to hospital for treatment, four were invalided, and three terminated fatally at sea. In a great majority of instances they were very slight, and speedily cured. Of the cases sent to hospital, three terminated fatally.

Such was the sickness, such the mortality, on this command, during the year 1830. We need not enter so much into details in the succeeding years, but rather content ourselves with indicating their differential characters. The chronicle of the first will have conveyed a good notion of the general salubrity or otherwise, of the Command.

Year 1831.—There was less death on the station than there was even in the preceding year, but there was considerably more in home hospitals, from disease contracted on it; so that the total mortality resulting from service, in the united squadrons, was a little more in 1831, than it was in 1830.

The mean numerical force of the year was less than that of the preceding year, being 5,714. The number of deaths during the two years 1830 and 1831, was the same, viz. 60. The ratio of mortality was, however, a little lower in the first than the last; in that it was, from all causes, on the station, and in home hospitals, at the rate of 10, in this it is, at the rate of 12.3 per 1,000 of force.

During the year under consideration, there were 50 deaths, from all causes on the station, 31 of which were at sea, and 19 in hospitals, being in the ratio of 8·8 per 1,000 dead of the employed. But of these 50 deaths, 10 were from external injuries; so that the ratio of mortality from disease, on the station, was little more than seven per 1,000 of force. Of the invalids sent to home hospitals, 20 died, making a total of 70 deaths, from all causes, at home and abroad, being, as has been stated, in the ratio of 12·3 per 1,000; and from disease, separate from external injury, 10·5 per 1,000 dead of the employed. The points in which the two years principally differ, are the greater mortality in home hospitals, and from external injuries in 1831, than in 1830. In 1830 there were only seven deaths in home hospitals, and six from external injuries; in 1831 there were 20 of the former and 10 of the latter. It often happens, however, when patients die in home hospitals from foreign stations, that death takes place the year after they were invalided abroad, which, so far, would lead to erroneous conclusions respecting a single year. In determining the absolute mortality resulting from the disease of a foreign station, by adding to the deaths on it, those which occur in home hospitals, from it, it is therefore essential to take the result of a series of years, little precise information being deducible from those of one year.

The total number placed on the surgeons' list during the year amounted to 8,883, being at the rate—higher even than that of the preceding year—of 1554 per 1,000 of force. Of the total number, 411 were sent to foreign hospitals, where 19 terminated fatally. The number sent to, and the number which terminated fatally in, foreign hospitals, are higher, each by about one-third, than in the preceding year, though the ratio of mortality on the station is lower. Sending seamen and marines to hospital is affected greatly by opportunities. When disease occurs far out at sea, or in harbours where there are no British hospitals, however severe or prevalent it may be, it must, of course, be treated to its termination on board.

Invaliding was resorted to in 163 instances, 80 on board, and 83 in foreign hospitals; the rate therefore at which numerical force was reduced through this medium was 28·5 per 1,000, being, within a very small fraction, the same as in the preceding year.

Thus, as 411 were sent to hospital for treatment, 80 were invalided, and 31 died in ships, 8,361 were cured on board.

A rather curious account is given of fever on board the *Pallas*. She sailed in December 1830 from England, for the Mediterranean, touching at Lisbon, proceeding to Malta, thence to Salamis and Spezzia, and then returning to Malta; at each of these places she remained only a few days. She finally left Malta for England on the 2d of February, 1831, having embarked there 200 men of the 90th regiment, 41 women and children, and 15 invalids from the squadron. From the time she left England till her return, the weather had been generally fine, for winter; the range of the thermometer was small, the lowest noted being 57°, the mean 63°. When off Sardinia, on her return passage, fever appeared, on the 8th of February, and, before the 21st, had affected 100 persons, when it suddenly and entirely ceased. It attacked equally the men, boys and officers of the ship; it attacked, but less extensively, the soldiers and invalids; it did not attack the women or children. What was the cause of this disease?—why were the

women and children exempted from such a sudden and rapid epidemic, living as they did in the same place with those who were attacked by it? The wind, after leaving Malta, till the 8th, had been from the south and west, when it suddenly shifted to the east. The disease would appear to have been one of the few febrile disorders, prevailing epidemically, which owe their origin to a purely atmospheric cause, at sea. The reason why the people belonging to the ship suffered more than the male adult passengers, while the women and children escaped, probably depended on exposure, and the degree of it, to the direct influence of the wind. The ship's company, officers, men, and boys, were necessarily much on deck, while the soldiers and invalids were below, at least at night, where the women and children were almost constantly.

Idiopathic erysipelas, with tendency to gangrene, is not now, though it once was, a prevalent disease in the navy; it is therefore a striking feature in the mortality of this year in these commands, that nine deaths resulted from it, seven at sea, and two in hospitals. Of the seven deaths at sea, four were in the *Prince Regent*, out of 26 attacks. She had been employed a considerable time in the Tagus, where the disease prevailed rather extensively. Sometimes a slight scratch or contusion appeared to call into action the erysipelatous force with which the system was charged, or to open the way for the operation of the specific cause of the disease; at other times, or rather in other instances, the first local symptom was a small furuncular swelling, independent of external injury. There was perhaps a prevailing disposition to the disease, as well as a peculiar cause for it.

The other three fatal ship's cases were in the *Ganges*, out of eight attacks, which occurred in her at sea, on a passage from Malta to England, and happened, in fact, in the beginning of 1832, though the return is dated in 1831. They occurred nearly at the same time, and were strictly idiopathic, no external exciting cause appearing in any of them. For such an effect there was a peculiar, probably diffused cause in the ship; and that no more cases occurred would appear to have depended on the low state of susceptibility of the crew generally to the operation of that cause. What the cause of the disease is, and why, as sometimes happens, it shall prevail in one ship, and not touch another close to her, is a subject of interesting inquiry.

The ulcerative cases were in the ratio nearly of the preceding year, amounting to 549; of which 35 were sent to hospital for treatment, and four were invalided. Of the total number 137 were in the *Ganges*, 18 of which were sent to hospital. Most of them were in September, the hottest month of the year, in Malta harbour, the subjects being generally marines. The disease during that month, when 81 cases occurred, presented a very uniform appearance. If affected the feet, close to the toes or ankles, the first symptom being a livid spot, which did not extend beyond the size of a penny-piece, and to which extent the integuments sloughed. It is stated by the surgeon, that the disease was not contagious, but "depended on some peculiar state of cuticular irritability, superinduced by the condition and temperature of the atmosphere." It should perhaps have been added, that some morbid agent, some local atmosphere existed in the ship—her own peculiar product—which contributed to the origin, and continuance of the disease, if it did not alone cause it; for it is remarkable that, when cases

were sent to hospital, they speedily improved, the sores assuming a more healthy aspect within the first twenty-four hours. Besides, it does not appear that ulcer of the same kind prevailed in other ships at the same anchorage.

Year 1832.—While the ratio per 1,000 of mortality from all causes on the station was 8.8 in 1831, it is 10.1 of force in the present year; but the total mortality of the former is higher by a fraction, on account of a larger proportion of deaths in home hospitals, from disease originating on the station. Again, though the number of deaths from external injuries was, at sea, the same in the two years, viz. 10, the reduction of mortality from disease, on the station, was considerably less, by them (accidents) in 1832 than it was in 1831; in 1831 the ratio per 1,000 force of mortality, from disease abroad, was little more than seven; in 1832 it was 8.5; the difference between the two years in this respect depending on difference in the number employed. Other differences in the details of the two years will be noticed afterwards.

The mean number employed during the present year was 6,634, being an increase of 920 on the active force of the preceding year. The total number of sick and hurt was 7,659, being in the ratio of 115.4 per 1,000 of the employed, while in the preceding year it was 155.4 per 1,000; making a reduction of a third nearly of sick and hurt in favour of the present year. Yet the total mortality of the two years, including the deaths in home hospitals, was almost exactly the same, and abroad considerably more in 1832 than in 1831; showing, with many like cases, how uncertain the relation between sickness and mortality often is.

Thus; it happens that a fever becomes suddenly epidemic on board ship, but scarcely, if at all, affects life, as happened in the *Pallas*, and other ships in the Mediterranean, in 1831. It also happens frequently when one disease prevails epidemically, that other diseased actions are suspended, or are less frequent, the master-malady, so to speak, having the power of resisting the attacks of other occasional diseases; and thus it happens that epidemics which have little destructive tendency, and are skilfully managed, though they prostrate great numbers, and create alarm, do not augment mortality. Even in severe epidemics, it is often matter of surprise, when they and the consternation which they caused are past, on comparing the total mortality resulting from them, and other diseases, with the mortality in equal periods when no such epidemic existed, the periods being considerable and the masses large to which the comparison is applied, that the increase of mortality during the epidemic period is so little as it is found to be.

Of the total number placed on the medical lists, 284 were sent to hospitals for treatment, and 147 were invalided; the proportion of both, especially of the first, was considerably less than in the preceding year. It was in the ratio of 42.9 per 1,000 of force, whereas in 1831 the ratio of cases sent to hospital was 71.9 per 1,000; and while the ratio of invalided in 1831 was 28.5 per 1,000 of force, abroad, in 1832 it was 22.2 per 1,000.

There were 242 cases of inflammation of the lungs, and their investing membranes, of which nine, all at sea, ended fatally; 21 were sent to hospitals for treatment, and two, in a chronic state, were invalided; there were two deaths at home. Of the total number of attacks, 55 were in the Cale-

donia, three of which terminated fatally. At the same time she had a great number (211) cases of catarrhal disease, many of them so severe as to approach the character of pulmonitis. All the cases occurred within eight months, the time between her arrival on the coast of Portugal and the close of the year. It is not easy to account for such a number of severe pulmonic affections in this ship—a ship of the line of the largest class. She was employed the greater part of the time in the Tagus, and off the coast of Portugal, where the atmospheric heat was generally rather high, and steadily so; a number of cases occurred before she sailed from England. The lowest degree of heat noted in England was 41, the highest on the coast of Portugal 75; but between the extreme points there was a lapse of weeks, and it appears to have risen and fallen very gradually. It was, therefore, generally mild, and as uniform as it almost ever is in such latitudes. There were none of those sudden, and violent changes of weather, especially in respect of heat, to which pectoral inflammation generally, and it would appear reasonably, is ascribed. How, then, is this prevalent form of diseased action to be accounted for? It is stated by the surgeon of the Caledonia that no other ship on the station had such a large proportion of disease. It is further stated, that she was in a very damp state, from frequent washing of decks, to which he is disposed to attribute much of the pulmonic disease, as well as other forms of disease, particularly erysipelatos. It appears that in June the practice of washing decks was less frequent than it had previously been, but the degree of diminution is not noted, nor whether it was increased, or lessened afterwards; the means are therefore imperfect for tracing the relation between washing decks, and disease. But, apart from this case, there is no reason to doubt that it is many ways, and often to great extent, prejudicial; for in addition to the sudden reduction of temperature resulting directly from it, when frequently applied, the decks are never dry, in the proper and healthy sense of the word, whatever means may be adopted for the purpose.

We look on this as a very interesting fact. The practice of excessive washing would really seem to be a most noxious one. We are confident that it has done, and is doing great mischief in our hospitals ashore. Contrast what occurred in the Caledonia with what happened in another ship on the same station.

The Asia, of 84 guns, was, at the same time, and during four previous months, employed in the Tagus, or near it, having had during the year only nine cases of pulmonic inflammation, and three of catarrh, all of which terminated favourably on board. As has been stated, the Caledonia, in the same position, and during eight months of the same year, had 55 cases of pulmonic inflammation, and 211 of catarrhal disease, so severe as to resemble fever complicated with pneumonia. It may be further stated, that, on comparing the general results of disease in the two ships, during the periods specified, while 12 were sent to hospital, and four invalided from the Asia, 38 were sent to hospital and 16 invalided from the Caledonia; and that there was only one fatal case in the former, while there were eight in the latter ship.

Eight deaths in as many months in a ship having the complement of the Caledonia, do not certainly make a serious loss of life, being in the ratio of little more than one and a quarter per cent. per annum of the employed,

but it is large by comparison with the loss sustained in the Asia. The comparison between the number of pulmonic attacks in the two ships is still more striking, and in this point lies the chief interest; for to difference in some thing, or things within the two ships, as it regards the number affected, must the difference be traced. It may be fairly presumed that the cause of difference in these cases should be sought for in the different means of cleaning, and ventilating adopted, though in many cases the component parts of the ships themselves should enter largely into the account. It is unnecessary to point to the important uses derivable from such an inquiry, or to assert, if strictly carried out and acted on, that it would conduce greatly to increase of health.

In the Caledonia, again, there were 74 cases of ulcer, but all of them, with one exception, were cured on board. There the ulcerative process was, perhaps, associated with the erysipelatous, which had some prevalence in her; there is sometimes identity in cause, with considerable difference in modes of development.

Year 1833.—The mortality of this year is more than that of the three preceding ones, though the increase on the first is inconsiderable, and on the two following, in which it was the same, trifling. In the year under notice, from all causes, and including the deaths, in home hospitals, from disease manifesting itself within the limits of the commands, it was in the ratio of 13 per 1,000 of force. From all causes on the stations it was in the ratio of 10.5 per 1,000 of force; and from disease on the foreign stations, separate from external cause of death, the ratio of mortality was under nine per 1,000 of active force. This, when it is considered that malignant cholera was added to the ordinary causes affecting life, and that it occasioned a considerable portion of the total loss, is a very low rate of mortality, and goes far, in connexion with preceding Reports, to show that the climate of the Mediterranean, and of the adjacent sea and harbours, is generally, and apart from occasional rare epidemics, highly favourable to the health of sailors.

The force of the united squadrons in the Mediterranean, and on the coasts of Portugal and Spain, in 1833, was large, comprising 51 vessels of all descriptions, eight of which were ships of the line, three of them three-deckers; the number of men and officers employed being 7,836.

The total number of sick and hurt was 10,274, being in the ratio of 1,311 per 1000 placed on the medical lists, of the employed. This ratio is certainly not low in itself, but it is worthy of remark, that it is considerably lower than it was in 1830 and 1831, though that of mortality is higher.

We turn to some particular facts.

Of the whole number, viz. 299 cases, of remittent fever, a very large proportion, 243, were in the Asia. The disease prevailed principally between April and September, the Ship being at anchor in the Tagus. It was, in most cases, not violent in impression, and short in duration, seldom lasting more than four days; only one case terminated in death. The surgeon believes that it had a miasmatic origin, derived from the contiguous coast. Forty-two of the 66 remaining cases of this form of fever occurred in the Donegal. She also was in the Tagus, and in her, as in the Asia, the dis-

case was generally not violent, and of short duration. In both cases the surgeons are disposed to attribute the fevers to some modification of the agency which, at the same time, occasioned cholera in some of the ships, and at Lisbon, in which city it destroyed a large number in a short time. This conclusion seems to have been drawn chiefly from the circumstance of the alimentary mucous lining being in an irritable state, with frequent evacuations, sometimes resembling those in cholera.

This looks like those attacks of diarrhoea which obtained so much in London during the prevalence of cholera, and which in a very large proportion of cases ushered that complaint in.

There were 26 cases of small-pox in the Caledonia, while anchored in the Tagus, one of which terminated fatally. The surgeon expresses himself satisfied as to the disease being true variola, but does not give any opinion respecting its origin in the ship, nor any statement as to its being in Lisbon at the time. The first man affected had neither had small-pox, nor cow-pox previously, though an ineffective attempt to vaccinate him was made some time before. In two other persons, one of them an officer nearly 60 years of age, there seems to have been good evidence of their having had the disease in early life, and that in them therefore small-pox occurred twice. Most of the persons affected by the disease had been vaccinated, but the surgeon expresses doubt as to the real vaccine disease having, in all instances, been excited; and gives it as his opinion, that the appearance, manner of progress, and termination of small-pox, in this instance, afford proof that vaccination, though it does not give absolute protection against small-pox, lessens violence, when it does not prevent attack, and confers a large measure of immunity. The subject of the fatal case had been vaccinated, but it does not appear how long before the attack of small-pox.

In a number of concurrent cases of fever, amounting to 20, and designated "synochus," one of which terminated fatally, having the general character of idiopathic fever, there appeared, though not in all of them, a copious pustular eruption—a symptom which the surgeon ascribes to the variolous infection prevalent in the ship, having the power of communicating this feature, and so far modifying the original disease. He expresses some doubt as to whether the fever in question was not a varioloid disease, and therefore dependent on the variolous atmosphere; but the severity of the febrile, and the slightness of the pustular symptoms, seem hostile to that opinion. The question is interesting; and it is remarkable, according to the opinions of the medical officers employed, that in the Tagus, and nearly at the same time, essential fever was greatly modified by the contemporaneous action of other morbid agents; by the cause of cholera in the Asia, and Donegal, and by that of small-pox in the Caledonia; those other independent agents having the power of communicating to the essential fever some of their peculiar symptoms.

Cholera, of the malignant kind, prevailed. There were 76 cases treated, 19 of which, in the Malabar, were the results of common atmospheric, and dietetic causes, and require no remark. Out of the 57 remaining cases, 17 terminated fatally; they were in the Asia, Donegal, Stag, St. Vincent, Talavera, and Revenge. After some details, we find it stated:—

What the cause of this formidable disease may have been, here and else-

where, this is not the place to inquire, even if it could be done with the prospect of arriving at a satisfactory conclusion. It may be admitted, however, to observe, that whencesoever derived, and wherever operating, it is essentially one and the same; and that in the case under consideration it was derived from the shore, whence it was carried, through the medium of the atmosphere, to the ships. It may be further stated, that there was no evidence of the disease being propagated by personal contagion.

Year 1834.—The ratio of mortality was lower in 1834 than in any of the preceding four years, except the first of the series, 1830; that is calculating all cases of death, whether resulting from external injuries, or disease; for deducting the former, which were less in 1830 than in 1834, the mortality was considerably lower in the latter than in the former.

The near approach to uniformity in the rate of mortality in these commands is striking. In a series of many years it will be found to vary very inconsiderably; the greatest difference between any of the five years examined is three per 1,000 of force, the lowest being 10 per 1,000 in 1830, the highest 13 per 1,000 in 1833. The reason why the difference is so slight is, of course, the rare eruption of destructive epidemics. On such stations as Jamaica, and the West Coast of Africa, the difference between two years, one immediately succeeding the other, is frequently great, the rate of mortality not exceeding that of the Mediterranean in one of them, quadrupling it or more, in the other. Even the outbreaking of a new and highly fatal form of disease, when limited to a section of the force, and not prevailing extensively there, as happened at Lisbon in 1833, does not always much augment mortality, its effects being apparently counter-acted by immunity from other, and ordinary causes of death. Thus, in the year just named, the ratio of mortality was higher by a fraction only, than in the two antecedent years, when the cholera in question did not exist; though a fourth part of the total mortality by disease on the station, in that year (1833), was occasioned by it. In the West Indies, and Western Africa, it is often far otherwise, from the operation of endemic fevers, the ordinary, and often evolved products of the places in which they show themselves.

The ratio of the total mortality of the year, including the deaths in home hospitals of patients received from the foreign stations, was 11.1 per 1,000 of the mean number employed, 97 deaths from all causes, in and from the squadrons, having occurred. But 17 of these were in home hospitals; so that there were 80 deaths from all causes, on the foreign stations, being in the ratio of 9.1 per 1,000 mortality of force. Of these 80 deaths abroad, 23 resulted from external injuries, and accidents, reducing the number of deaths, by disease, on the stations, to 57, and giving the very low proportion of 6.6 per 1,000 of force dead by disease during the year, within the limits of the commands.

The mean number of men and officers employed during the year, was 8,745, being an increase of 909 on that of the preceding year. The total number of sick and injured was 11,393, being in the ratio of 1,302.8 per 1,000 of the employed. This ratio is nearly the same as the corresponding one of 1833; the proportion of injuries was, however, larger in the present year than the last, rendering the proportion of disease less, and reducing the ratio of sick to about one in the 100 of the employed.

There were 27 cases of small-pox, three of which terminated fatally. In the Asia there were 18 attacks, and two deaths. She was at anchor in the Tagus during the continuance of the disease, which was nearly four months. The surgeon states that it was generally slight, in some causing scarce any febrile disturbance; and that all those affected had been vaccinated, but at what previous period does not appear. The appearance, progress and power of small-pox in this instance, do not tend to lessen the obscurity which involves the important question—to what extent vaccination has the power of preventing or mitigating, attacks of that disease.

In the Tyne there was one death out of eight attacks. The first case occurred in the person of one of the lieutenants, soon after his return from an excursion to part of Egypt, while the ship was at anchor on the coast. He was not aware of having been exposed to the disease during his absence; he had been vaccinated, and got over the attack easily. In six other cases the disease was not severe; in one it was confluent, and proved fatal. The last case was the only one in the ship, where there was not evidence of previous vaccination, or small-pox. The origin of the disease cannot be traced; but it is satisfactory to know that the fatal case occurred in a person who had not been vaccinated, while others who were more slightly affected, had undergone that operation.

Year 1835.—The ratio of total mortality, resulting from service, in the Mediterranean, and on the shores of the contiguous Peninsula, differs in a very slight degree from that of preceding years, taking the deaths from all causes, and whether occurring on the foreign stations, or in the persons of patients sent thence to home hospitals. We shall notice a few facts.

In the Barham there were 34 cases, designated typhus fever. The disease made its appearance soon after anchoring in the Bosphorus, close to the Valley of the Sultan, which is represented as abounding in fever exciting miasmata, and to which the fever in the Barham is ascribed by the surgeon. Up till the period of her anchoring there, she was free from fever. In such circumstances typhus was not to be apprehended, nor is it usual to apply the term to fever derived from such a source; remittent fever, though perhaps without well-marked periods, and with congestive symptoms, was to be apprehended. Two out of the 34 cases proved fatal.

In the Tweed there were 13 cases of fever, designated "mixed," four of which terminated fatally. The ship left Lisbon on the 1st of August, and did not return from the west coast of Africa till the 24th of October, during which time the fever, with its fatal results, broke out and terminated. During her service on the African coast, she anchored a week off the Rio Gambia, for the purpose of procuring wood and water—an employment always attended with danger on such a coast. In this instance the ship's company were not so employed, the work being done by Kroomen, but mere proximity to the shore was sufficient apparently for the production of the disease. A few days after leaving the anchorage, fever made its appearance on board. It did not extend far, but had a severe character, and occasioned a large proportionate loss of life.

Rheumatism was common, and often extremely intractable. It is a curious fact, not generally known, being at variance with commonly received opinions, that rheumatic affections, which obstinately resist treatment in the

Mediterranean, and other places of similar climate, often get rapidly well in England. During the year, 470 cases of the disease were treated; of which 16 were invalided, being two-thirds of all the invalided of this order of disease, "inflammation with fever."

Altogether from diseases of the lungs, acute and chronic, there were 37 deaths, making a large proportion of the mortality of the year, the total number dead, by disease, being 89.

These and similar facts which have been formerly stated, do not furnish a flattering account of the influence of the Mediterranean in pulmonic disease, either in a preventive, or curative point of view, comparatively, at least, with other naval stations; yet it has been and still is the practice, in recommending a foreign residence to consumptive patients, to give the preference to the shores of that sea.

Under the head of "ulcer," 499 cases were reported; of which 31 were sent to hospital, and seven invalided from ships. Generally the disease was mild and tractable, the ulcerative process having little force, and loss of substance being inconsiderable. The Caledonia again suffered the most, having had 103 cases, seven of which were sent to hospital, and one was invalided. In her there was prevailing tendency to erysipelas, with which the ulcerative action was associated. A similar tendency existed in the ship last year, and during several preceding years; and it is therefore probable, to whatever common causes the crew might be exposed, that there was some peculiar agency in the ship herself causing that tendency.

Year 1836.—The ratio of mortality, in the joint squadrons, in the six successive years which have been enumerated, was low, the highest, that of 1833, being no more than 13 per 1000 of the active force, the result of disease and injuries, not only on the stations, but in home hospitals, in patients received from the Mediterranean, and Peninsular commands. During the year 1836, the ratio of mortality, from the same sources, and in the same places, was as low as 7.9 per 1,000 of the mean number employed, the total number dying on, and from the station being 89, viz. 76 abroad, and 13 at home. But of the total 89 deaths, 16 were from external injuries, reducing the mortality by disease to 73, which is in the ratio of 6.5 per 1,000 of mean strength. The rate of mortality, from all causes, on the stations, accidents as well as disease, was 6.7 per 1,000 of force, and from the latter, little more than 5 per 1000. The results, whatever view may be taken, are highly satisfactory, the entire loss to the service being so small; if the mortality, from disease on the stations be looked at, separate from death by external injuries, and in the persons of invalids at home, it will appear strikingly low, only one death, to every 188 men employed, having occurred.

It has been observed that, during the six preceding years, the annual rates of mortality had differed very inconsiderably; and it was stated that, in such positions, rarely visited by severe epidemics, a pretty close approach to uniformity might be expected. This year forms an exception, difficult to account for; because, in that respect—immunity from any destructive epidemic—it had little advantage compared with the six preceding years. It is true that malignant cholera affected two, which, on account of a return being mislaid, was extended to three of them; but during the two last, 1834 and 1835,

only five deaths resulted from the disease, two in the former and three in the latter; to account for different rates of mortality, these numbers would avail little. Even in 1833, when there were 17 deaths from cholera, the ratio of mortality scarcely rose above that of other years, when no such disease existed.

The causes of such difference, in such circumstances, were no doubt traceable, could all the ordinary agents called non-naturals, injuriously applied, producing, and aggravating disease, be detected, and duly appreciated; as they cannot, the necessity arises of considering it accidental. One of the sources of difference between the year in question, and the immediately preceding year, was the small proportionate loss from acute diseases of the lungs in this, compared with the former. The agencies producing that source were certainly not unimportant, nor accidental, as to their operation; but why their operation was so much more powerful in the first, than in the last, does not appear. Another and principal source of difference was the much higher proportionate loss from external injuries in 1835, than in 1836; this was however accidental, in the proper sense of the word.

But though the rate of mortality was much lower in the present year, than in the six preceding years, the rate of sickness was not. It was indeed higher than in the most of them; it was higher considerably than in the immediately preceding one, the rate of mortality being lower by a third. The total number of sick and hurt during the year was 14,623, being in the ratio of 1292.3 per 1,000 of mean strength. The ratio per 1,000 of force, of cases sent to hospital, was 44.4, differing but little from any of the preceding years, except 1831, when it was 71.9. The ratio of invalided, like that of dead, though not in equal proportion, was the lowest of any of the seven years. It was, including the invalided in home hospitals, and on all accounts, chronic disease, debility, age, and effects of injuries, 21.6 per 1,000 of strength; so that the total loss to the squadrons, by invaliding, added to death, was under three in every hundred of the mean number employed. It does not follow that the loss to the service was so much; for a number of the invalided, on the foreign stations, recovered health and strength at home, and would sooner or later return to it.

There were 36 cases of small-pox in the Hastings, at Lisbon, two of which terminated fatally. The surgeon's report, as to the powerfully modifying influence of vaccination, in this instance, is satisfactory. In one of the fatal cases, the subject had not been vaccinated; in the other, though the operation had been performed, the cicatrix was indistinct; in a severe, confluent case, there was no mark of vaccination; while in all the instances, in which the scars were considered satisfactorily distinctive of effective vaccination, the disease (small-pox) was remarkably mild.

GENERAL RESULTS.

The Reporter passes to a general review of the condition of the naval force in the Mediterranean during the last seven years. He first presents a Table showing the total number of cases; the number of all diseases and injuries, in classes; the number of cases sent to hospital, invalided and dead; with the ratio of each per 1,000 of mean strength.

"These figures," says he, "furnish a gratifying account of the health of the

naval force, in the Mediterranean, and on the shores of the adjacent peninsula, during the seven years to which they refer. They would no doubt be more satisfactory, if they embraced a longer period, as they ought, were it the object of the Report to exhibit, not only the state of health now enjoyed, but also to compare it closely with what it was in former, distant times, and to show its progressive improvement. In order to obtain the latter objects, it would be necessary to go back at least fifty or sixty years, when, however, and indeed long afterwards, no documents were furnished, from which any thing like correct conclusions could be drawn. The total number dying might be pretty nearly ascertained, but the separate causes of death, at sea, and the sources of those causes, when traceable, must be mere guess-work. Were it possible to institute an accurate comparison between the health of the Navy, as it then was, and now is, the difference, in favour of the present condition would be found immense, and render it more striking even than it is. As to the rate of improvement through a long series of years, it would not be found at all steadily progressive; it would rather be found to have made great advances at certain well-marked periods. One, and the most remarkable, of the advances in improvement took place about the close of the last century, and soon after the time, when, among other advantages conceded to the fleet, the system of victualling was placed on a fixed, and sufficient footing; when the nominal became the real ration of the sailor, and the fraud and iniquity perpetrated under the cover of *pursers' weights* were abolished. From that period, till the termination of war in 1815, the progress of improvement was not rapid. The health condition varied at different times and places, in connexion with the nature, and localities of service, but no great change, pervading the whole, can be traced. Peace, however, made many beneficial changes in the condition of the naval force, and with them came increase of health. Service was altogether voluntary, of short and defined duration, and free from many restrictions, and privations, which were necessary, at least in reference to impressed men, during war. Meat could be issued soon after it was salted, and biscuit after it was baked; and they were consequently more palatable, and nutritious, than they had been, though the same in quantity, in the latter years of the war. These, and other changes, including the power of selecting seamen, the diminution of the allowance of spirits, and the issue of tea, or coffee, instead, have raised health to its present high standard."

The average annual rate of mortality, during these seven years, was 11.1 per 1,000 of active force, the total number dying, on the stations, and from them, being 617, the aggregate number employed, 55,709. Of the 617 fatal cases, 101 were from external violence, and 97 occurred in patients from the stations at home; so that no more than 419 deaths resulted from disease abroad. Deducting the deaths from external causes, the mortality by disease on the stations, and from them, in home hospitals, averaged 9.3 per 1,000 per annum; and taking the deaths on the stations, resulting from disease, and independent of violence, the annual rate of mortality, was little more than 7 per 1,000 of the employed.

Low, however, as the rate of mortality is in these commands, it is higher than in South America, where the average of the same seven years has been shown to be no more than 7.7 per 1,000 annually of active force, the effects of disease both on the station, and in home hospitals, from it, being on the station 6.5 per 1,000. Compared with the West Indian and North American command, the mortality in these commands, the effects of disease, is almost exactly half.

The average number of sick and hurt was 1304.6 per 1,000 per annum
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of force; of sick, separate from hurt, 1081·7 per 1,000. These averages differ very little from the corresponding ones in South America, where the sick and hurt averaged 1310·7, and the sick alone 1071·8 per 1,000, per annum of force; but it will be seen that the proportion of injuries was smallest in the Mediterranean, the total number treated being rather less, while that of sick was more than in South America.

The total loss sustained by the squadrons in the Mediterranean, and on the neighbouring coasts, from the number invalided, added to the number dead, averaged 36·9 per 1,000 of force annually, the mean annual rate of mortality being, from all causes, abroad and at home, 11·1, that of invaliding, in the same terms, 25·8 per 1,000 of the number employed. It is remarkable that the entire loss sustained by the South American squadron, during the same time, was precisely the same, the larger proportion of invaliding there being exactly balanced by the greater mortality here; the average yearly mortality of the South American squadron was 8·9, of invaliding 28 per 1,000 of the employed.

The next Table shews the total number of cases; the number of all diseases and injuries, in classes; the number invalided and dead; with the ratio of each per 1,000 of attacked.

The loss sustained by the squadrons during these seven years, from all forms of essential fever, was slight, the average mortality being under two per 1,000 annually of the employed. It was more, however, than in South America, where the mortality averaged only 1·3 per 1,000 per annum of the employed. In these commands, though considerably greater than in South America, it is small in itself, and insignificant, when compared with the West Indies. There, though the ratio was much lowered, it may be assumed by a third at least, on account of the West Indian force being mixed up with the North American, the average annual mortality was 11·2 per 1,000 of the employed; it was therefore about six times as much as in the Mediterranean, nine times as much as in South America. But though the proportion of dead was higher in the Mediterranean than in South America, that of affected was lower; the annual average of cases was 84 per 1,000 of force in the former, while it was 115 in the latter. In both instances, especially the latter, the disease, in a great majority of cases, had little force, and was frequently, there is little question, slight symptomatic, rather than primary, fever. The remark, though less generally, may be applied to disease designated fever in the West Indies; for while 264 died, 4,932 were treated there under that name.

The affections classed under the head of "organic diseases of the brain" amounted to 113 cases in seven years; of which 20 were sent to hospital, 12 were invalided, and 42 terminated fatally. They include acute inflammation, palsy, and apoplexy, but are composed chiefly of the two latter, which furnish all but one of the fatal, and all the invalided cases. The ratio of attacked, as well as of dead, is much higher than in South America, or the West Indies.

There were 1,742 cases of inflammation of the lungs, and their membranes and air-passages, exclusive of catarrh, and influenza; of which 249 were sent to hospital, 34 were invalided, and 54 terminated fatally. The annual rate of attacked averaged 31·3, of invalided 6, of dead 1, per 1,000 of force. In comparing these with the corresponding ratios in South

America, and the West Indies, it appears that they are all unfavourable to the Mediterranean, except that of invalided, in South America, for which want of hospitals there, independently of diseases' force, will satisfactorily account. Thus, in South America the average annual rate of attacked was 28, in the West Indies 22, per 1,000 of force; while the annual ratio of mortality was, in the former, 1 in 2,400, in the latter, 1 in 1,100, of the employed. The mortality from these diseases is strikingly low in South America.

Of all forms of hepatic disease, designated inflammatory, there were 403 cases; of which 62 were sent to hospital, 25 were invalided, and 12 terminated fatally. The annual ratio of the first is 7.2, of the second 1.1, of the third .5, of the last .2, per 1,000 of the employed. The infrequency of such disease in the Mediterranean is remarkable.

The loss by primary inflammation of the alimentary organs, including the stomach and bowels, with their membranes, was very slight.

But, while these affections of the alimentary organs were less frequent and fatal, than in the other two commands, organic diseases of the pulmonic apparatus were much more frequent than in either, and, including primary inflammation, more fatal, especially when compared with South America. In the Mediterranean 285 cases were treated under the name of "phthisis;" of which 127 were sent to hospital, 70 were invalided, and 105 terminated fatally. These fatal terminations include the deaths not only on the stations, but in home hospitals, from them, the total resulting mortality, in fact; the same remark applies to all diseases in the seven years' summary; it may therefore be inferred that the term phthisis was not, in every one of the 285 cases, correctly applied. The average ratio of such cases was 5.1 per 1,000 per annum of force, while in South America it was 3.2, and in the West Indies 4.8. The annual ratio of invalided was 1.3 per 1,000 of force, while in South America it was little more than half; in the West Indies it was 2.4: why it was comparatively high there does not appear. The average ratio of dead was 1.9 per annum, being the same as in the West Indies, while in South America it was 1.5 per 1,000 of the employed.

In the year 1831 there were nine deaths from erysipelas, which have been placed in the Table of principal diseases, though, from the infrequency of the affection in a severe form, in the other commands it was omitted. During the other six years in this command, other fatal cases occurred, but not having a common source, and not appearing to possess essentially the same character, they are noticed among diseases which do not prove frequently fatal to seamen.

There were 742 cases of dysentery, of which 88 were sent to hospital, 16 were invalided, and 18 terminated in death; the ratio of attacked was 13.3 per 1,000 of invalided, and of dead 1 in 3,000 each per 1,000 annually of force. The ratio of attacked was a little more, of invalided half, and of dead the same, as in the West Indies. Comparing them with South America, that of attacked was little more than half, of invalided, and dead, not a third.

Venereal disease was frequent, no fewer than 4,222 cases of it having been treated, 2,771 of which were syphilitic, and 1,451 gonorrhoeal. The average ratio of the first was 49.9, of the last 26 per 1,000 annually of

force; the temporary reduction of force by these forms of disease was therefore considerable. Compared with the West Indies, they were more numerous by a half, with South America by a third. But they were all, though so numerous, cured on the station, whereas 15 were invalided from the West Indies, and 13 from South America.

Rheumatism was not so prevalent as in the other two commands. The annual average ratio of attacks was 63.9 per 1,000 of force; in South America it was 72.3, in the West Indies and North America 69 per 1,000 annually of force.

But while rheumatism was less frequent than in the other two commands, and less severe than in the West Indian, especially as measured by the ratio of invaliding, the proportion of catarrhal cases was considerably greater here than in the West Indies and North America, much greater than in South America. Here the average ratio of attacks was 201.7 per 1,000 annually of force: in the West Indies and North America it was 181.8, and in South America 137.8 per 1,000 annually of force. Out of the total number of cases, which in seven years amounted to 11,237, 12 terminated fatally; three cases in the West Indies, and one case in South America terminated fatally. The two diseases, rheumatism and catarrh, are attributed to similar atmospheric agency, in which the most notable property is reduction of temperature; and it is believed that the excitation of one, or other depends chiefly on the condition of the subject, as to degrees of susceptibility existing in different textures of the body. The opinion has prevailed during all ages, and is no doubt generally just; but it is no less true that there are often other, less evident, and little suspected, agents in operation, especially in the production of disease designated catarrh. In the cases under consideration, it appears, that while catarrh was much more prevalent in the Mediterranean than either in the West Indies and North America, or South America, especially the latter, rheumatism was less prevalent and much less detrimental, particularly in comparison with the West Indies and North America.

INFLUENCE OF FORMS OF SHIPS ON HEALTH.

"As vague and conflicting opinions are entertained in the service respecting the comparative salubrity of different classes of ships, and as the subject is one of intrinsic interest, it is desirable to submit it to the test of numbers, so far as the peace constitution of squadrons will admit of its being settled. The question can only be tried in such commands as have a considerable number of ships of all classes: that was the case in no other than the Mediterranean, and on the Peninsular coasts, and to those the inquiry is necessarily confined. It was an object to make a distinct class of steam vessels, and their number being very small, till the year 1834, the comparison begins with that year, and is carried on through the two following, so that it embraces the total force of the joint squadrons, during three years, the aggregate numbers employed being 28,908."

Dr. Wilson admits that the time and the numbers are yet too limited for absolutely settling the question. Still an approximation to the truth is attainable.

For the object in view, all the ships and vessels employed have been divided into four classes.

The first class embraces all ships of the line, whether they have two, or three gun-decks; the second all frigate-built ships, whatever their tonnage, or weight of metal may be; the third all flush-decked vessels, sloops, brigs, schooners; they will be referred to as a class, under the general name of corvettes; and the last vessels of which steam is the principal propelling power.

There is much difference in the size of the vessels composing each of these classes, on the sanatory power of which, in connexion with the numerical force of their respective crews, it is not intended to enter here; but it may be stated, that the complements of ships of war are pretty closely adjusted to their sizes, to whatever class they may belong; and further, that difference in size, in the same class, does not appear to possess much influence on health. But in each of the classes, whatever be the size of the individual vessels, there is a peculiar form, giving a particular distinctive position to the places where the crews sleep, and eat, which may be presumed to act on health; at least, this is true—the particular position of the inhabited parts—of all the classes, except the two last, in which there are other circumstances which differ greatly, which are likely to have much influence, the power of which it is desirable to determine.

In the first class, composing ships of the line, the part of the ship occupied by the crew, at meals, and during sleep, has ports, and at least one deck between it and the holds, store-rooms, and wells; there is also a gun-deck over it, intermediate to it, and the upper deck. In frigate-built ships of whatever size, the inhabited deck is immediately over the holds, &c.; over it is the gun, or main-deck, and over that the upper or quarter, and fore-castle deck. The inhabited deck has no ports, and is deprived of those means of ventilation. Scuttles are cut in the sides for that purpose; but they are so close to the water, that they are available only in fine weather, at anchor. Corvettes, forming the third class, have no gun-deck, in the language of the service. Their guns are planted on the upper, flush, or weather deck, between which and the holds there is but a single deck, without ports for the accommodation of the crew. In general form, the fourth class, that of steamers, is like the last, the inhabited part having the same relation to the holds, and the open air; but they have the addition of the steam apparatus, and, when at sea, augmented temperature, and evolution of steam.

Four Tables are given for the purpose of exhibiting the kind and the frequency of disease that obtained in vessels of seventy-two guns and upwards—in frigates—in corvettes—and in steamers.

The largest proportion of mortality resulted from service in frigates, the next in corvettes, the next in ships of the line, the smallest being in steamers. In the first, the annual rate of mortality on the average of three years, was 9, in the second 8.1, in the third 7.6, in the fourth 5.4, per 1,000 of the mean number employed. The ratios are deduced not only from deaths occurring on board, but also in hospitals abroad and at home, of patients sent from all the vessels composing the four classes. To arrive at correct conclusions, it was necessary to ascertain the results of disease, originating in each of the classes, in hospital; because there is great difference in the

number of patients sent thither, apart from the frequency and violence of disease, the difference depending partly on the will of commanding, and medical officers, but principally on the contingency of being at sea, or in harbours having hospitals. This is strongly exemplified by the relative numbers sent to hospital from the second, and fourth class—from frigates, and from steamers; being from the last, in a ratio three times as high, as in the first. Steamers, being almost always employed in making passages, and making them quickly, have frequent intercourse with hospital harbours, which, with inferior accommodation for sick on board, accounts for the large proportion thus disposed of. How far the frequent opportunities they have of sending their sick speedily to hospitals, may contribute to lower their ratio of mortality, cannot be determined; because it cannot be known to what extent the results of disease would have differed, if all the sick, or a great proportion of them, had been kept on board. But it may be presumed, considering the apparent advantages afforded by hospitals, that it would have been augmented in that case, in some degree, whatever the degree might have been. It will be seen, while their ratio of mortality was so low, their ratio of sick was much higher than that of frigates; it was the highest indeed of all the classes, except that of corvettes, than which it was very little lower. This, however, is a very uncertain measure of the force, and fatal tendency of disease.

The ratio of invalided did not, from the nature of things, differ so much as that of sent to hospital; yet the difference between all was considerable; between two, the first and last, great. In the first, the average ratio was 22·1, in the second 17·5, in the third 20·1, in the fourth 13, per 1,000 per annum of force. The remark as to the ratio of dead, applies equally to this; namely, that it is deduced from the total number invalided, whether on board, in foreign, or in home hospitals, from each of the classes. And it appears, that the two classes which had respectively the highest and lowest proportion of deaths—the frigates and steamers—had the lowest proportion of invaliding, though it was considerably less in the steamers, which had the lowest, than in the frigates, which had the highest mortality; while in ships of the line, which, after steamers, had the lowest proportion of deaths, the rate of invaliding was the highest, nearly doubling that of steamers. Part of the difference in these results—the want of proportion between the number sick, sent to hospital, invalided, and dead, though the second should scarce be enumerated—may be the effect of contingent, not permanently operating causes in the respective classes; and it probably is so.

Essential Fever.—The ratio of attacks did not differ materially in the different classes, the lowest being 65·4, the highest 76·8 per 1,000 annually of force; the first was in ships of the line, the last in frigates. But there was great difference in the rates of mortality, being double in one, and more than double in another, what it was in the other two. Thus, it was 1·1 in ships of the line and steamers, while it was 2·2 in frigates, and 2·7 in corvettes, per 1,000 annually of force. As respects attacks, the steamers had nearly as large a proportion as frigates, in which the mortality was double, and a larger proportion than corvettes, in which the mortality was more than double.

On the other hand, the steamer class suffered more from primary inflam-

nation than any of the other classes. By death, their loss was in the ratio of 2.2 per 1,000 annually of force; in ships of the line and frigates, it was 1.8 each; and in corvettes, it was 1.2. By invaliding, the loss of the steamers was 8.7, while in ships of the line it was 4.9, in frigates 6.4, and in corvettes 6.8, per 1,000 annually of force. The high heat alternating rapidly with comparatively severe cold, to which the crews of steam ships, particularly the engineers, are exposed, was probably the cause of, or, at least, would appear to account for, the greater force, and more intractable nature of inflammatory affections in this class. They were also more frequent in it, than in any of the other classes, except the third, in which the mortality from this class of disease was the lowest.

"In the hæmorrhagic class of diseases, which comprises phthisis and hæmoptysis, the discrepancy is surprising, and so great as to be irreconcilable with all that is known of those diseases. The frequency of recovery from phthisis, in the service, or, in other words, the comparatively low proportion of deaths to attacks, has more than once been adverted to; and it has been stated, that part, at least, of such apparently favourably results, might arise from occasional error in diagnosis, the term 'phthisis' being applied to affections which did not possess its real nature. This, looking at the high ratio of cured, in connexion with the obscurity of the primary symptoms, and the difficulty often encountered, in ascertaining the distinctive physical signs, at sea, may be safely asserted, without imputing want of care or intelligence to the medical officers. But though generally applicable to a certain extent, it cannot be supposed to operate more in one class of ships than in another; and the discrepancies between the various classes, in this respect, in this disease—the number attacked, and the ratio dead—appears unaccountable.

It is remarkable that the proportion of attacks increased, though not in a regular ratio, in the inverse order of the size of the different classes, so far as they are distinguished by size. Thus, in ships of the line it was 9.1, in frigates 10.6, in corvettes 18.6, in steamers 23.9 per 1,000 annually of force. The same remark applies to the numbers sent to hospital; the smallest proportion was from ships of the line, rising through the others, and being much greatest in steamers. It does not apply to invalided, the annual ratio being the same, viz. 3.3 per 1,000 of force from liners and corvettes, 2.6 from frigates, none being invalided from steamers. Comparing the number dead with the number attacked, and sent to hospital, in the various classes, with relation to the mean number employed, the order of things was reversed, the proportion of mortality being highest in the large, lowest in the small. Thus, in ships of the line it was annually 2.4, in frigates 2, in corvettes 1, in steamers 1.1, per 1,000 of force. It was low in them all, strikingly so in the two last, and rendered more striking in steamers, by the large proportion of cases reported in them. About two-thirds of all the cases comprised in this order of disease, the hæmorrhagic, are placed under the head of phthisis. The number in steamers amounted to 22; supposing, not two-thirds, but the half of them, to have been phthisical, how is the very small resulting loss, viz. one death out of the whole number, to be accounted for?—Does steam act curatively in such cases?"

II. BIRTHS, DEATHS, AND MARRIAGES IN ENGLAND.

We turn from the navy to the Second Annual Report of the Registrar General for England. A document of no mean consequence and merit. For much of it is devoted directly and specifically to medical statistics and to

the improvement of medical science. The attention of the government of this country is beginning to be directed to this object, and it requires no gift of prophecy to foretell that both the legislature and the executive must extend more assistance to it, than has heretofore been given.

The Registrar compares the results of the last year's registration with those of the preceding one.

The numbers registered in the year ending June 30, 1839, were—

Births	480,540
Deaths	331,007
Marriages	121,083

which, compared with the numbers for the preceding year, shew, for births an increase of 80,828; for deaths, a decrease of 4,949; for Marriages, an increase of 9,602.

The increase of the number of registered births is attributable to the success of the plan of registration. A registration of births has thus been effected for the second year of registration, approaching much nearer to a complete record of the whole number born, than was afforded by the registers of baptisms for the 10 years ending 1830, the latest period at which we possess authentic returns with respect to such registers. The mean annual number of registered baptisms during that period was 375,349; and if it be assumed that the number of such registered baptisms has increased in the same ratio in which the population increased from 1820 to 1830, it will appear that the probable number registered in the parochial registers for the year ending June 30, 1839, will not have exceeded 460,000, a number less than that of the number of registered births for the same period by more than 20,000.

The Registrar ascribes the decrease of registered deaths to a really diminished mortality. He believes that that of the preceding year was above the average, owing to the inclemency of the winter in the beginning of the year 1838, and to some epidemics, the prevalence and severity of which appear to have subsequently declined.

The Registrar thinks that it is impossible, at present, to do more than approximate to a solution of the important question—What is the proportion of the mortality to the population of England and Wales? The only data for arriving at an estimate of the population for the year ending June 1839, are the returns of 1821 and 1831. Taking the enumerations then given,—adding the Scilly Isles, which were omitted in 1821,—adding for the army, navy, and other unenumerated population, according to the statements prefixed to those returns, such proportions as may be assumed to have belonged at these periods respectively to England and Wales, the numbers will be as follows:—

1821	12,162,056
1831	14,055,562

These numbers include all who may be assumed to have incurred the risk of death within England and Wales at those periods, and whose deaths might have been registered, if an act similar to the present had then been in operation, all of whom were not included in adverting to those returns in my report of last year.

With these corrections, and on the assumption that the rate of increase since 1831 has been the same as from 1821 to 1831, the population of whom

the deaths might have been registered, may be estimated to have been nearly as follows, at the middle of each of the two first years of registration under the present law :—

	Males.	Females.	Total.
January 1, 1838	7,612,967	7,828,768	15,441,735
January 1, 1839	7,723,924	7,942,876	15,666,800

The deaths registered in the years of which the above-mentioned periods are the middle terms, were—

	Males.	Females.	Total.
Year ending June 30, 1838 ..	170,965	164,991	335,956
Year ending June 30, 1839 ..	169,112	161,895	331,007

Without correction for omissions, this would shew the mortality to have been as follows .—

	Males.	Females.	Total.
1837-38	1 in 44·5	1 in 47·5	1 in 46·
1838-39	1 in 45·7	1 in 49·	1 in 47·3
Mean of the 2 years	1 in 45·1	1 in 48·2	1 in 46·6

Assuming that the population may be estimated as above, and that it is unnecessary to allow a greater correction than 2 per cent. for omissions in the registration of deaths, the mean mortality of the two sexes for those two years will have been about 1 in 46.

With the marriages of the people, or with their education, points discussed by the Registrar, we have no immediate business ; nor need we therefore go into them. We may simply mention that, in 15 English counties, and in North and South Wales, more than 40 per cent. of the men were unable to write their names ; and in 19 English counties in the West Riding of Yorkshire, and in Wales, more than half the women were similarly deficient. It deserves mention also, that there is a decided superiority with regard to education in the metropolis, as compared with the rest of England and Wales, and, next to the metropolis in the north of England ; and that the principal deficiency is in Lancashire, Bedfordshire, Monmouthshire, and Wales.

In 4,858 marriages, the average age of marriage was, for men, about 27 years, for women, 25 years and a few months.

The Registrar has made some essential alterations in his plan.

“ In exhibiting,” says he, “ abstracts of the number of deaths at different ages, for the year ending June 1839, I have adopted an arrangement different from that which was employed for the first year of registration ending June 30, 1838. Instead of exhibiting enumerations of deaths at every successive year of age, I have divided the periods at which death occurs in a manner more conducive to the attainment of those purposes for which such enumerations are made. I have divided the deaths in the first year into six periods ; during the following four years, I have shewn them for each separate year ; and, after that age, for quinquennial periods. I will briefly state the reasons for this change.

With respect to the subdivision of the first year, it must be observed that more than a fifth of the whole number of deaths registered in the year ending

June 30, 1838, namely, 71,888 out of 335,956, are under one year of age; that the distinction of months at that early period will exhibit circumstances more important with respect to the expectation of life, than that of years at later periods; and that the expectation of life on the day of birth differs greatly from that of six, three, or even one month old. It appeared to me, therefore, that such distinctions ought not to be overlooked; and that the abstract should be framed rather with reference to the ascertained ratios of mortality, than to an equal division of the periods of age. After the first year, the ratio of mortality rapidly declines; and this decrease is shewn by the enumeration of deaths for each of the four following years."

"After the fifth year," he goes on to observe, "I have combined the ages in quinquennial periods, a system which, after much consideration, I deemed preferable to that adopted in the abstracts for the first year of registration, namely, of stating the number of deaths at each successive year of age."

To the statement of deaths at each successive year, it might be objected that it was delusive, and assumed an appearance of minute accuracy which was not founded on truth. This objection is not applicable to the reported ages of children. Their recent births are fresh in the recollection of their parents or guardians, and their age is stated with sufficient accuracy. But it is not so with respect to the ages of persons far advanced in life; many of whom, especially among the poorer classes, are ignorant of their exact age, and when they die, leave no record which enables their surviving relatives to state their ages with precision. An evidence of the vagueness attending statements of age is 'the tendency to speak in round numbers' noticed in the preface to the abstract of the population for 1831, a tendency causing a great apparent excess of mortality in the decennary periods at 30 and upwards, and of which the following remarkable instances may be found in the abstract of ages published in the preface to the population abstract for 1831, extracted from Burial Registers in England and Wales for 18 years:—

Ages.		Ages.		Ages.		Ages.		Ages.	
29	26,630	39	23,778	49	23,689	59	25,782	69	33,038
30	32,027	40	33,513	50	33,527	60	43,273	70	53,953
31	22,301	41	20,989	51	20,911	61	26,084	71	32,162

Experience has shewn that this incorrectness also exists in the statements of ages in the registration of deaths, as will appear upon reference to the abstracts for the year ending June 30, 1838.

An abstract of deaths at every successive year of age is, therefore, confessedly incorrect; and, in stating this, I am stating a strong reason against its continuance; for by exhibiting such an abstract, I should commit a fault which I deem it most important to avoid,—that of assuming the delusive appearance of more minute accuracy than actually exists. By combining the deaths at different ages, after the fifth year, in quinquennial divisions, not only are errors and irregularities materially diminished, but the abstracts are rendered in a form more useful, more conducive to the fulfilment of those practical objects for which such abstracts are principally compiled. The most important use of abstracts of deaths is their application to the construction of tables of mortality; which, it must be remembered, are constructed, not from enumerations of deaths alone, but from two series of facts,—the numbers living at different ages, and the numbers dying at the same ages, and the observed relation between those facts. This relation of the living to the dying is varying daily. But it is obvious that however complete might be the record of facts, complete beyond all conceivable possibility of attainment, these variations in the minuter portions of time would be too irregular for the safe deduction of any general laws; and that it is only by including large numbers of facts, and long portions of time, that we sur-

most the difficulties which such casual irregularities create, and arrive at the ascertainment of any well-founded laws of mortality.

In the assignment of these periods, the quinquennial division is found to be recommended, both by its correspondence with the enumeration we already possess of the ages of the living, and by the authority of those who have already adopted it. The ages of the living in 1821 were enumerated for quinquennial periods up to the age of 20, and for decennial periods after that age. The numbers of the living at different ages were not enumerated in 1831. It is earnestly to be wished that such enumeration may be made in future, and for quinquennial periods beyond the age of 20; but it is needless to expect that an enumeration more minute than for quinquennial periods, for all above childhood, can be effected with success. If, therefore, the utmost to be expected with respect to the future enumeration of the living is, that it be given for quinquennial periods, it becomes advisable that the age at which persons have died should be given in a corresponding manner."

The extract is important, and, we invite attention to the suggestions it contains.

The Registrar remarks that the Carlisle table, the Swedish table, the Northampton table, the Montpelier table, and Deparcieux's table of annuants were all calculated upon these principles.

The Registrar proceeds to notice the most remarkable diversities exhibited by the Abstracts of the second year of Registration, with respect to different portions of the kingdom.

The most marked and serious difference is that which is observable between the mortality of rural districts and of large towns, as exemplified in the proportion of the deaths of children, and of persons dying at advanced ages. The mortality of children appears to have been greatest in towns; and among those towns respecting which he can exhibit separate returns, the greatest at Manchester, where it appears that out of every 1,000 deaths of males, 496 were of children under three years of age. The mean deaths of children under three years, in Manchester and Salford and suburbs, were 475 out of 1,000 deaths. In Leeds and its suburbs, the proportion was 447; in Birmingham 440; in Liverpool and West Derby, 437; while in Dorsetshire and Wiltshire, it was 281; in Devonshire, 296; in the North Riding of Yorkshire, with Durham (except the mining parts,) and the northern part of the West Riding, 282; and in the northern part of Lancashire, Westmorland, Cumberland, and Northumberland (except the mining portion of the latter,) not more than 253. In the whole of England and Wales, the mean mortality under three years was 343 out of 1,000 deaths at all ages; and it is to be remarked that, notwithstanding the comparative unhealthiness of towns, the proportion in the metropolis is still less, namely, 338.

Equally remarkable are the contrasts exhibited by the towns and rural districts, with respect to the proportion of persons who appear to have died in old age. The proportion out of every 1,000 deaths, which have been at the age of 70 and upwards, has been in Manchester, only 53; in Liverpool, 60; in Leeds, 68; in Birmingham, 78; in the Metropolis, 99; while in the North Riding of Yorkshire, and the agricultural parts of Durham, it is 202; in Devonshire, 208; and in the North of Lancashire, Westmorland, Cumberland, and Northumberland, not less than 210. In

the whole of England and Wales, the proportion, out of 1,000 deaths occurring at 70 and upwards, was 140.

Great also are the differences exhibited by the mining districts and the agricultural districts which surround them, with respect to mortality, both in childhood and in advanced age.

In the mining parts of Staffordshire and Shropshire, the mean deaths in 1,000 at all ages under three years, were 462; at 70 and upwards, only 90. In the rest of Staffordshire, Shropshire, and Cheshire, the proportion under three years was 332; at 70 and upwards, 141. In the mining parts of Northumberland and Durham, the proportion of deaths under three years of age was 349; of deaths at 70 and upwards, 150; while in the surrounding agricultural districts comprised in divisions 22 and 24, the proportions of deaths under three were only 282 and 252; and of deaths at 70 and upwards, 202 and 210.

In Manchester and Birmingham, the year ending June 1839 shews an increased mortality among children as compared with the preceding year; but in Manchester there appears to be a diminished mortality between the ages of 20 and 40, and between 55 and 75; in Liverpool, a diminished mortality between 30 and 50; and in Leeds, a diminished mortality between 25 and 50.

But the Abstracts of the first and second years of Registration shew very little difference either in the Metropolis, or in the whole of England and Wales.

We pass now to the Appendix, which consists of a Letter to the Registrar-General from Mr. William Farr. The zeal, the talents, and the accuracy of this gentleman need no eulogy from us, and we accordingly proceed at once to the facts which he has collected and communicates.

The Appendix contains :—

Mortality and Diseases of the Year 1838—Diseases of Males and Females—Diseases of Towns and of the Open Country—Influence of Climate—Influence of the Seasons—Progress of Epidemics—Statistical Nosology—Table of Mortality for the Metropolis, 1840, (reprinted from the Weekly Tables published at the General Register Office.)

Mr. Farr makes some remarks on the utility of Registration, in which we cordially concur. We proceed to—

MORTALITY AND DISEASES OF THE YEAR 1838.

The rate of mortality in 1838 was higher than in the latter half of the year 1837. Small-pox and typhus prevailed epidemically. The epidemics began in 1837, close upon the decline of influenza, and attained their acme early in the year 1838. The class of pulmonary diseases was much more fatal, so were the convulsions of young children, and the equally obscure maladies of old age. The rigorous weather, which set in early in January, exercised a decided influence upon several of these diseases; and was, with the epidemics, apparently the cause of the increased mortality.

The annual rate of mortality was :—

Males.	Females.	Mean of the Two Sexes.
2·28	2·12	2·20 per cent.
or 1 in 44	1 in 47	1 in 45.

DISEASES OF MALES AND FEMALES.

The mortality of males was seven per cent. higher than the mortality of females; and it is well established that the mean duration of life in females is longer than in males. The Tables exhibit the principal diseases which lead to this result; and show that, while the two sexes are concurrently exposed to the ravages of nearly all the causes of death, their degree of liability to death from particular maladies is very various. The discrepancies may be ascribed to two sets of causes; a difference of organization, and a dissimilarity of habits and occupations, involving different degrees of exposure to the accidents, hardships, and dangers of life. Deaths from childbirth and deaths from violence are examples; 2,811 women died in childbirth, while 8,359 males and only 3,368 females died violent deaths. The higher mortality, and the smaller number of males living, have been ascribed exclusively to intemperance, wars, excessive fatigue, and other external causes; but this ground is too narrow; for the differential mortality is greater in early childhood and before birth than in the more advanced ages, and one of its causes must be sought in the intimate structure and properties of the body.

34,321 males and 33,556 females died of the *epidemic class* of diseases; small-pox, measles, croup, thrush, diarrhœa, dysentery, cholera, and influenza, proved most fatal to males; whooping-cough to females. Typhus, scarlatina, and erysipelas, were scarcely more fatal to males than to females.

The annual mortality from the first class of diseases was 4·5 in 1,000 living; and half the amount, or 2·3 in 1,000, was occasioned by *small-pox* (1·0), and *typhus* (1·3); the former disease, as well as whooping-cough, having been more fatal than in 1837, and the latter nearly the same; while measles, thrush, diarrhœa, dysentery, cholera, and ague had declined.

Diseases of the *nervous system* destroyed 49,704 persons; 26,047 by *convulsions*, 7,672 by *hydrocephalus* (water in the head,) and 2,178 by *cephalitis* (inflammation of the brain,) three common diseases of children.

Mr. Farr comments on the vagueness of the heads—Convulsions—Fits—Teething.

The diseases of the nervous system are 23 per cent. more fatal to males than females, the chief difference arising from the diseases which affect children. The mortality from *apoplexy* was—males 4·0, females 3·5 in 10,000; from *paralysis*—males 3·1, females 3·5, in 10,000; the proportion of deaths from these maladies having been reversed in the sexes. To *chorea* (St. Vitus's dance), the deaths of 4 males and 20 females were ascribed; to *delirium tremens*, the deaths of 167 males and 15 females; *tetanus* (lock-jaw), 100 males and 29 females. The proportion in tetanus is 34 males to 10 females; but it is rarely an idiopathic disease, and men are ex-

posed in almost a similar proportion to the injuries in which it originates. It will be observed that, to 10 females, 24 males died violent deaths.

Diseases of the *respiratory organs* produced 90,823 deaths, that is, a mortality of 6.0 in 1,000; while the annual mortality of the group in 1837 was 5.5 in 1,000, or 11 per cent. less. The mortality of *consumption* fell from 3.96 to 3.93 in 1,000; pneumonia, bronchitis, and pleurisy, rose from 6.93 to 1.38 (69 per cent.); asthma, from 2.5 to 3.8 (52 per cent.) 3.8 in 1,000 males, and 4.1 in 1,000 females, died of *consumption*; 11,691 males, and 9,488 females, died of inflammatory affections of the throat, larynx, air-tubes, lungs, and pleura. Consumption is 8 per cent. more fatal to females than to males. In point of fact, 27½ per cent. of the total deaths were due to diseases of the respiratory organs, and 18 per cent. to consumption; namely, 16.0 per cent. of the deaths of males, and 19.2 of the deaths of females.

Mr. Farr apostrophises stays very vigorously.

"The higher mortality of English women by consumption may be ascribed partly to the in-door life which they lead, and partly to the compression, preventing the expansion of the chest, by costume. In both ways they are deprived of free draughts of vital air, and the altered blood deposits tuberculous matter with a fatal, unnatural facility. *Thirty-one thousand and ninety* English women died in one year of the incurable malady! Will not this impressive fact induce persons of rank and influence to set their countrywomen right in the article of dress, and lead them to abandon a practice which disfigures the body, strangles the chest, produces nervous or other disorders, and has an unquestionable tendency to implant an incurable hectic malady in the frame? Girls have no more need of artificial bones and bandages than boys."

2,032 males, and 1,530 females, are registered as having died of diseases of the heart and blood-vessels; but this is below the true number. Aneurism destroyed three times as many males (88) as females (31), the proportion observed in 1837.

Diseases of the *digestive organs* (unlike diseases of the chest) were less fatal than in the latter half of 1837; the mortality having declined from 1.4 to 1.3 in 1,000, or, including thrush, diarrhoea, dysentery and cholera, from 2.07 to 1.59 in 1,000. The deaths attributed to *teething* increased; in this, as in other respects, the heterogeneous cases under the head having a stricter affinity to diseases of the nervous system. *Stricture* of the intestinal tube is often caused by cancerous deposits, and hence affects more females than males. Fifty-one males and 117 females died of peritonitis, probably, in some instances, puerperal peritonitis; 318 males and 189 females of hernia. Exclusive of teething, 10,992 persons died of diseases of the stomach and bowels; 3 of diseases of the pancreas; 3,880 of diseases of the liver (including jaundice, 841); and 27 of diseases of the spleen. The 1,385 cases classed under "disease of the intestinal canal" comprised cases of chronic enteritis, gastritis, and dyspepsia, as well as some malignant diseases.

1,338 males, and 313 females, died of diseases of the urinary organs. The mortality of the former from stone and gravel was 4 in 100,000; of the latter, 0.5. The difference in the 7 heads is exaggerated by, but it cannot be exclusively attributed to, mechanical causes.

2,811 mothers died in childbirth and miscarriage, or about 5 in 1,000 cases, while the proportion in 1837 was 4 in 1,000.

The mortality from rheumatism, and diseases of the bones, joints, cartilages, tendons, and muscles, remained 1·4 in 10,000.

The deaths from affections of the integumentary system were comparatively few. 82 males and 18 females died of fistula, the proportion having been the same as in diseases of the urinary organs. Add to the class the acute diseases from the epidemics, with specific inflammations of the skin, and the mortality will be 2·01 in 1,000; while with typhus, and the epidemic diseases which affect the mucous membrane, the diseases of the intestinal canal were 2·58 in 1,000. The mortality from the two groups was 4·6 in 1,000; lower than in 1837, and 30 per cent. less than the mortality (6·0) from diseases of the respiratory organs.

Diseases of uncertain seat proved fatal to 21,871 males and 22,361 females. They include diseases in which the part was faultily left unspecified in the register, such as "inflammation;" or diseases which, like cancer, pervade several organs, and in which the distinction of parts is quite subordinate to the distinction in the essential nature of the morbid products. *Dropsy* was observed in 5,170 males, 7,172 females; *hæmorrhage* in 730 males, 488 females; *mortification* in 802 males, and 541 females; *malformations* in 93 males, 73 females.

Of *purpura* there died 27 females and 31 males. Under hydrocephalus, hydrothorax, ascites, ovarian dropsy, and dropsy, 22,428 deaths were registered; 10,734 males and 11,694 females.

Sudden deaths were cases in which inquests were held, but in which the causes of death were either not ascertained, or not intelligibly expressed. 3012 were registered; 1840 males and 1172 females. Sudden death is most frequently the result of internal hæmorrhage; but the subject is not and cannot be well understood, until *post mortem* examinations are more generally instituted in this country. Out of 10,000 males 6·5 died of sudden death or apoplexy, and 5·1 out of 10,000 females. With violent deaths, which are also generally sudden, the annual mortality of males was 18·1 in 10,000.—of females 9·6 in 10,000. Women have less chance of dying suddenly than men, in the proportion of 10 to 18.

12 per cent. of the deaths of females, and 10 per cent. of the deaths of males, were ascribed to *old age* and to natural decay.

The deaths of 125 males and 36 females were referred to *intemperance*. The difference in the proportion of the sexes is still greater in *delirium tremens*, sometimes designated drunkards' delirium; of which 167 males and 15 females died. 161 males and 46 females died of *gout*. The consumption of intoxicating liquors has increased faster than the population in the last 20 years; and the sale of spirits at a much more rapid rate than that of ale or wine, which can only be injurious when taken to excess. The average annual number of bushels of malt on which duty was paid in England was 25,834,345 in the 5 years 1820-4; 35,048,368 in 1834-8; in 1820-4 the quantity of wine returned annually for home consumption was 4,751,104 imperial gallons, in 1833-7 it was 6,461,866 gallons; in 1820-4, consumption duties were annually paid in England on 7,572,702 imperial gallons of proof spirits, which in 1834-8 had risen to 12,612,484 gallons; and the opium entered for home consumption rose in the same periods from

19,276 lbs. annually, to 33,482 lbs. The decennial rates of increase were for malt, 24; wine, 27; spirits, 39; opium, 53 per cent. For malt, the annual rate of increase was only 1.2 per cent. from 1810-4 to 1826-30; but the consumption rose rapidly under the Act to permit the sale of beer, and the annual rate of increase from 1827 to 1836 was 3.3 per cent. The consumption of wines rose from 4,681,357 gallons (1820-3) to 6,617,363 annually in 1824-8, when the duty was reduced from 9s. 1½d. to 4s. 9½d. a gallon. It then remained nearly stationary.

The 63 cases ascribed to starvation in 1837 have been since carefully investigated. 24 were infants that died for want of maternal nourishment; 12 died of inanition; 12 died from exposure to cold; 15 from the want of proper food, or from the want of the necessaries of life. The coroners were not the informants in the majority of instances. In 1838, the deaths of 126 males and 41 females, making 167 in all, were classed under starvation.

11,727 persons died violent deaths; of whom 8359 were males, 3368 females. They may be divided into voluntary and involuntary deaths. The number of registered suicides amounted to 1058 (males, 751, females, 307); and in many cases of individuals "found dead," the agent was not ascertained. The tendency to commit suicide increases up to the age of 60; the rate of increase is nearly 50 per cent. every 10 years.

It may be stated, as a general summary of the diseases, grouped according to their pathological characters, that 36,799 died from inflammations, 85,506 from specific inflammations, 19,122 from the terminations of inflammation, 15,125 from hæmorrhages, 2821 from carcinomatous diseases; 60,868 from tuberculous diseases; 2256 from disordered secretions, 2512 from depraved nutrition, 44,773 from disorders of the nervous system, 35,564 from old age, 11,727 from violent deaths.

Mr. Farr dwells with satisfaction on the fact that the results of the Registration in 1838 coincide very closely with those contained in the first report. We are delighted to transfer to our own pages the following high compliment to the country practitioners of Britain.

"The information as to the cause of death was obtained from the medical practitioners of the country, directly or indirectly; and the analysis of their observations, which is here presented, will show that they are not surpassed in intelligence or zeal for the promotion of science by the medical practitioners of any other country in Europe. May I venture to express a hope that they will contribute to render the registration of the causes of death still more accurate by giving, in every case which they attend, a written certificate, drawn up as nearly as may be upon the principles suggested in your first report."

DISEASES OF TOWNS AND OF THE OPEN COUNTRY.

In the first half year of registration the difference between the diseases in a dense and scattered population was remarkable. But this might be accidental. Let us test it by the year 1838, which presented a great range in the temperature and the epidemic constitution.

The population in 1838 would be about 3,726,221 in the city districts, and about 3,539,908 in the counties. The city was probably to the rural population as 1.053 to 1.000; and to this extent (5 per cent.) the deaths

in the counties should be augmented to render the mortality strictly comparable.

Besides the 70,410 persons who died equally in the dense and in the more scattered populations, there was an excess in the cities of 30,609 deaths; 9,970 from diseases of the epidemic class, 7,474 from diseases of the nervous system, 10,465 from diseases of the respiratory organs, and 3,144 from diseases of the digestive organs. The annual rate of mortality in the cities was 2·7, in the counties 2·0 per cent.; and the mortality in the cities 1·36 to 1·00 in the counties. The mean duration of life in the two sets of circumstances would differ nearly in the ratio of 37 years and 50 years.

In examining the special causes of death, three classes may be distinguished; one class which was exaggerated in cities to the highest pitch, a third class in which the mortality was nearly the same or in excess in the counties, and an intermediate class. To 1·00 deaths in the counties the deaths out of the *same amount of population* in the cities were by asthma, 3·80; erysipelas, 2·71; convulsions and teething, 2·57; cephalitis and hydrocephalus, 2·41; hydrophobia, 2·37; pneumonia, bronchitis, and pleurisy, 1·99; delirium tremens, 1·98; typhus, 1·88; small-pox, 1·73; heart-disease, 1·73; childbirth, 1·63; syphilis, 1·59; rheumatism, 1·58; gout, 1·55; hernia, 1·48; purpura, 1·46; sudden deaths, 1·45; liver disease, 1·45; hepatitis, 1·35; tetanus, 1·32. The excess of mortality in cities was less in the following cases: by consumption, 1·24; croup, 1·23; violent deaths, 1·17; stone, 1·11; mortification, 1·10; malformations, 1·07; apoplexy, 1·07; hæmorrhage, 1·02.—The mortality by the third class of causes was greater in the counties than in the cities: for the mortality to 1·00 in the counties was, in the cities, by paralysis, ·99; dropsy, ·99; jaundice, ·99; diabetes, ·97; cancer, ·92; hydrothorax, ·88; hæmatemesis, ·79; debility (frequently premature birth), ·75; atrophy, ·75; scrofula, ·46.

The same injuries and diseases are more fatal in cities than in the country. Parturition, from the frequency of puerperal fever, in town is 63 per cent. more fatal.

“If the mortality in the counties has been taken for unity, and all above it has been termed excess, it must not be understood to imply that less than 70,410 deaths may not be expected to occur out of a population of 3,539,908. The population of the counties, which have been held to represent the country, included the inhabitants of several cities. The mines of Cornwall caused many deaths; and any one who has visited the ill-ventilated dwellings of the poor, and is acquainted with their limited command of clothing, firing, and substantial food in agricultural districts cannot come to that conclusion. The minimum degree of sickness which a well-educated, affluent people would experience, and the years which they would number in the circumstances most favourable to health, are unknown; for the majority of the rich and middle classes whose lives have been observed, live principally in ill-constructed cities, and are exposed to the epidemics generated among their unhappier neighbours. It will be prudent therefore not to speculate upon a state of things of which the registers afford no examples, as it may sound paradoxical to fix more than fifty-five years for the average duration of human life; and it would not be practicable to suggest any means for improving by immediate measures the health of agricultural districts more effectual than the improvement of the cities in their centres, from which so many diseases radiate.”

These reflections are extremely just, and extremely valuable. And they ought to attract the serious attention of our legislators. If the public health formed as anxious a subject of inquiry and solicitude, as political and party interests do, the public happiness would be materially increased.

Is, asks Mr. Farr, the excessive mortality of cities inevitable? He observes that it is only of late that such mortality has been fully proved and generally credited. It was scarcely known before the publication of the first report of the Registrar General, that the mean duration of life was from 25 to 30 years in the east districts, and from 40 to 50 years in the north and west districts of the metropolis. A fact so startling is calculated, when rightly considered, to inspire hope rather than dismay. We again quote Mr. Farr:—

“The first writers who established satisfactorily the high mortality of cities took a gloomy and perhaps fanatical view of the question. Cities were declared vortices of vice, misery, disease, and death; they were proclaimed ‘the graves of mankind.’ The population of the country, it was said, was drawn to them to be sacrificed; and those who entered left all hope behind, for no prospect of health in cities was beheld. Happily the further application of the methods which those eminent writers employed, and the facts which the registers furnish, enable us to analyse the causes of death in cities; and to show that while the mortality is increased as much as they stated, the apprehensions into which they were betrayed were ill-founded when applied to the future. There is reason to believe that the aggregation of mankind in towns is not inevitably disastrous. Health and life may be preserved in a dense population, provided the density be not carried beyond certain limits. Of this the nature of the causes to which the mortality is due, as well as the rapid improvement in the health of London within the last two centuries, is presumptive proof; and the favourable condition of several districts of the metropolis leaves little room for doubt on the subject.”

Mr. Farr goes on to remark, that the primary objects to be kept in view are, the careful exclusion of all unnecessary animal and vegetable matter; the immediate removal of residual products; and the dilution of inevitable exhalations. The dead should no longer be buried where they are surrounded by crowded dwellings. Unwholesome manufactories should be excluded from densely-peopled districts. And there is assuredly no reason why thousands of cattle, sheep, horses, and animals of every kind—sometimes affected with epizootic diseases—should be gathered together in market-places within the city, or slaughtered in houses where the blood and offal can never be effectually removed. Public slaughterhouses have been erected in other places, without putting the butchers to any real inconvenience, or raising the price of meat. The supply of pure water, and a system of drains and sewers are other points which have attracted attention. The sewerage of the metropolis has been much improved; but the able Reports of the Parliamentary Committees show not only that there are still deplorable deficiencies and imperfections in the sewers, but that the unsatisfactory state of things is due, in no small degree, to imperfect laws, or to the machinery by which the laws are worked. If a survey were made of the districts of the metropolis, and the levels, the sewers, the drains, and the nuisances known to be pernicious were accurately laid down upon a map, it would be found to agree very remarkably with the table of relative mortality; and the construction of such a map would complete the view of the evil in all its details, and form the basis of a well-planned remedy. It will probably be found that the immense

quantities of agricultural produce brought to London, and disgorged in the sewers, and the Thames, may be collected with less danger to the public health in distant reservoirs, filtered and returned, in the shape of manure, to the fields in the surrounding counties. The population is limited by the amount of subsistence, and the produce of the soil is limited by the quantity of this very organic matter which is so recklessly thrown into the wasting sea.

Wide streets, squares, and parks, with spacious houses, would render ventilation easy, and secure the dilution of poisonous emanations; but the ground is valuable, and building is dear in cities; hence there has been a constant and an unopposed tendency in landlords to accumulate the greatest number of houses on the least possible space in poor districts, and the families of artisans are driven to crowd in small, low, close rooms. The evils from this source are one of the contingencies of poverty and ignorance; they may, however, be met by opening, in the densest neighbourhoods, a certain number of wide streets, through which the collateral streets would be ventilated by fresh atmospheric currents. As information spreads among tenants, landlords will naturally render the districts in which their property lies healthy. Men will pay higher rents rather than expose themselves and their families to the risk of sickness and death. The landlords of the metropolis, at whose expense the improvements must be made, are deeply interested in its sanatory state; for every amelioration conducive to the health of the inhabitants, raises the value of houses, while the deterioration of the atmosphere must inevitably drive the wealthy out of town, and lead to the erection of residences in the country, which the facilities of travelling will every day render more accessible.

We of the metropolis, are deeply interested in whatever affects its sanatory state. But our country readers are scarcely less so. For, *mutatis mutandis*, what is true of the metropolis is true of the great provincial towns, and cities with their civilization and diseases are springing up throughout the length and breadth of England.

INFLUENCE OF CLIMATE.

Mr. Farr remarks on the advantage, were it attainable, of determining this. He points out the steps he has taken in his calculations, but we need not specify them. Nor indeed can we insert the tables that embrace them. There is nothing on this head sufficiently satisfactory to detain us.

INFLUENCE OF SEASONS.

Mr. Farr remarks, that reduction of temperature is one source of mortality—malarious exhalations are another. Winter, then, may be the most fatal to the inhabitants of a city on a favourable site, furnished with sewers, or to an agricultural population occupying a dry soil; and summer to the inhabitants of marshy districts, or of cities in which the refuse of organic matter is exposed to putrefaction.

The deaths registered in the metropolis in the winter quarter of 1838

amounted to 15,611; in spring, to 13,109; in summer, to 11,397; and in autumn to 1,581. Summer was the healthiest, winter the most fatal season: and this rule has prevailed in England since the beginning of last century. It is the reverse of the doctrines of the early English writers, and of the Greek and Roman physicians, summed up by Celsus in the aphorism: *Saluberrimum ver est: proxime deinde ab hoc, hiems: periculosior aestas: autumnus longé periculosissimus*. This order of salubrity, still observed in Rome, and in the towns on the shores of the Mediterranean, might be ascribed to the climate, if it had not formerly obtained in London, and other cities on nearly the same isothermal line. Julius Cæsar placed the *middle* of spring, summer, autumn, and winter, at the equinoxes and solstices; and according to this arrangement of the months, in which winter dates from November 11th, the relative mortality of the seasons in London was, winter 26, spring 16, summer 44, autumn 163, in five plague years of the seventeenth century; and in five intercurrent years the mortality was, winter 17, spring 14, summer 15, autumn 24,—precisely the order laid down by Celsus.

The remarkable change in the relative mortality of the seasons in London will be best seen in the subjoined comparison.

The mortality of the seasons in the seventeenth century was deduced from the weekly bills of mortality; and the absolute mortality from the annual deaths, and from an enumeration of the population of the city of London, in 1631. It will be perceived at once, by this comparison, that the high rate of mortality in summer did not, in the seventeenth century, imply a low absolute rate of mortality in any season. The severities of winter were unmitigated, though they were thrown into obscurity by the plague. If the annual mortality of the metropolis had been the same in 1838 as it was in 1606-10, the deaths in the four seasons would have been—winter 26,200, spring 28,210, summer 39,670, autumn 37,960: if it had been as high in July, August, September, as in the plague years, 307,950 might have been registered in three months, instead of 11,397. So much has the health of London improved: so much is life under human control!

And if such extension of existence in the metropolis *has* occurred, why may not equally striking advances still occur? When we look around us, and observe the filth, the crowding, the want of drainage, of proper sanitary regulations, the destitution, and the intemperance that may still be found in the metropolis, and when we reflect both on the obviousness and practicability of the remedies, we may indulge the hope that the increase of this great city will bring with it a corresponding increase of the health, and consequently of the happiness of its inhabitants.

There was a peculiarity in the diseases, and a corresponding irregularity in the temperature, in the year 1838. At Chiswick in the vicinity of London, the mean temperature of winter (January 1st to March 31st) was 40°, spring 55°, summer 61°, autumn 45°, during the 10 years 1826-35; in 1838 the mean temperature of winter was 35°, spring 52°, summer 60°, autumn 44°. The mean temperature of the year was 47°.6, of the 10 years preceding, 50°.5. The mean temperature of January was 4° below the freezing point; while on an average of the 10 years, 1826-35, it was 4° above the freezing point. In the shade the thermometer fell 4½° below zero, or 14° lower than in 1826-35, when the minimum observed was 10°. The

cold in London was less intense. The temperature of the four seasons at the apartments of the Royal Society, Somerset House, was 36°, 53°, 61°, 45°, of the year 48°·9. The thermometer did not fall lower than 11°.

The dryness of the seasons, measured at Chiswick with Mr. Daniel's dew point hygrometer, was 2°·2, 5°·7, 4°·7, 1°·3, in 1826-35, and 1°·9, 6°·1, 4°·2, 1°·0, in 1838. The moisture was above the average; yet the quantity of rain that fell was only 21½ inches, while the average quantity in 1826-35 was 24 inches.

The electric state of the atmosphere was not observed; but it is indicated by the deaths from lightning, which in the kingdom amounted to 24; in winter 1, spring 10, summer 11, autumn 2.

Professor Lindley has stated that "the winter of 1837-8 was in England more injurious to vegetation than any which has occurred in modern times, and it must be many years before its disastrous effects can be repaired, under the most favourable circumstances."

It is evident from these details that the registration of 1838 is well calculated to exhibit the influence of cold.

The cold increased the mortality in the metropolis from the following diseases to the greatest extent—paralysis, apoplexy, asthma, hydrothorax, bronchitis, pleurisy, pneumonia, influenza, diseases of the heart, &c. diabetes, dropsy, mortification, sudden deaths, and old age.

Cephalitis, hydrocephalus, and convulsions were scarcely more fatal in winter than summer.

Consumption destroyed the greatest number in spring; but the excess of deaths may have been the result of the previous winter's cold. Males suffered from the disease in winter more than females.

Diseases of the digestive organs and some nervous affections prevailed in summer.

PROGRESS OF EPIDEMICS—EPIDEMIC OF SMALL-POX.

Mr. Farr observes that the registration has already yielded facts which are likely to throw light upon the propagation of epidemics. The deaths from small-pox in 324 divisions of the kingdom are exhibited separately in each of the ten quarters, from July 1st, 1837, to December 31st, 1839; a period comprising two winters, two springs, three summers, and three autumns.

The grand epidemic was composed of a succession of smaller epidemics; and, whether the commencement or the acme be considered, it is evident that the disease was not regulated by any cause, such as temperature; for, at the time that it was beginning in one district, it was at its height or was declining in another, placed in apparently the same general circumstances.

The following statement is as valuable as circumstantial.

When the Registration Act came into operation the epidemic of small-pox had commenced, and was rapidly advancing. It was raging at its height on the western side of the island. In Liverpool and West Derby 458 individuals perished, and were registered under small-pox, in the first three months. Bath, with a much smaller population, lost 154 lives; Leicester, 43; Shrewsbury 35. The epidemic prevailed in the south-west

counties in autumn, extending to the districts around Bath, and then passing from Somersetshire to Devonshire, where it destroyed 131 lives in Exeter, and half as many more in the surrounding districts: and to Wiltshire, where 40 died in Calne, Marlborough, and Pewsey, 48 in Devizes, and 22 in Salisbury. It penetrated further into the country; 64 died in Wycombe, 72 in Wolverhampton, 57 in Blackburn, 99 in Wigan. The deaths from small-pox in Wales were tripled; 69 died in Wrexham, 85 in Abergavenny and Pontypool, 54 in Merthyr Tydfil. The hills and the valleys of Wales were traversed, and 711 victims were cut off, in the third quarter, the winter of 1838. The disease hovered over the Metropolis at the first: 22 died in Holborn, 10 in Whitechapel, 16 in St. George's, Southwark, 29 in Lambeth, 47 in Greenwich: the deaths from it were doubled in the second quarter; 753 perished in the winter of 1838. The surrounding districts were infected, Richmond, Kingston, Brentford, Staines, and Uxbridge; Dorsetshire, in the south-west, that had remained almost exempt, was visited; Weymouth, Bridport, Beaminster; then Sherborne, Dorchester, and Cerne; and Taunton that had been just left by dysentery, with Williton, Wellington, and Bridgewater, in Somersetshire. During the winter quarter (1838) not less than 121 died in Bristol and Clifton; 63 in Worcester, 36 in Dudley, 61 in Wolverhampton, 108 in Birmingham and Aston, 40 in Altrincham and Runcorn, 156 in Manchester and Salford. The small-pox mortality attained its maximum in the spring of 1838; the Metropolis saw 1,145 carried to premature graves; Surrey lost 83 by the malady; Kent, 132; Berkshire, 64; Wiltshire, 93; Somersetshire, 222; Gloucestershire, 142; Worcestershire, 89; Warwickshire, 107; Lancashire, 442; Yorkshire, 282; Durham, 88; Cumberland, 44; Monmouthshire, 82; Wales, 515. In three months, 4,489 deaths from small-pox were registered. The epidemic paused, either because its strength was exhausted or its victims failed; yet 3,685 fell under its hands in summer, 3,851 in autumn. On the Surrey side of the Thames, and at the west end of the Metropolis, the mortality attained the highest pitch in the summer and autumn of 1838; in the three last months of the year, 104 died of small-pox in the Westminster district. Ramsgate and Margate suffered severely. In the summer 76 died at Reading; in autumn, 62 in Ely, North Witchford, and Wisbeach, Cambridgeshire; 50 in Romford, Orsett, Billericay; 48 in Rochford and Maldon; 78 in Colchester, Essex; 95 in Ipswich; 48 in Plymouth; 180 in Manchester; 106 in Oldham; 197 in Leeds; 22 in Whitehaven; 38 in Westmorland.

In 1839 the epidemic reached Norfolk: in the spring, 127 were destroyed in Walsingham, Docking, Freebridge Lynn, and King's Lynn; 180 in Norwich, where 204 more died in the ensuing summer; the disease still raging in Essex and Suffolk, but with diminished violence. The North and the East Ridings of Yorkshire, Sunderland, Newcastle-upon-Tyne, and Tynemouth, were visited. The epidemic subsided on the eastern shore; and in the summer of 1839 only 1,533 died of small-pox in the kingdom: 65 cases of small-pox were registered in London. In the autumn of 1839 signs of a second epidemic appeared at Liverpool, Bath and other towns; the deaths in the kingdom rose to 1,730.

The epidemic destroyed more than 30,819 persons.

The annual rate of mortality from small-pox was 0·8 in 1,000. In the Metropolis 1·1; in Monmouthshire and Wales, 1·2 in 1,000.

Mr. Farr asks if the simple principle of contagion will explain the rapid propagation of the epidemic?

"Not exclusively: for the disease is always contagious, and a certain number of deaths are caused by it in all seasons, and in every county of England. The facilities of intercourse, and the frequency of contact with the sick, are not greater when the disease is increasing, or is at its height, than when it is stationary or declining. The fact that 2,513 died in the first period, 3,289 in the second period, and 4,242 in the third period, must therefore be accounted for, either by assuming that the disease had its origin in some spreading physical cause; that the contagious principle grew more virulent, and was conducted with greater facility by the atmosphere; that the susceptibility of the population increased; or, finally, that the tendency of the organization to fall into this peculiar pathological state augmented spontaneously. Five die weekly of small-pox in the Metropolis when the disease is not epidemic; and it will be recollected that the question is not to account for this rate of mortality, or for the five weekly deaths which may occur as other deaths occur, or be kept up by the uniform transmission of the disease from family to family. The problem for solution is,—Why do the five deaths become 10, 15, 20, 31, 58, 88, weekly, and then progressively fall through the same measured steps?"

He adds:—

"It may be contended that Manchester derived the small-pox from Liverpool. The intercourse between Liverpool and Manchester is perhaps more intimate than between any two towns in Europe. The epidemic broke out early in 1837, at Liverpool, and it appeared in Manchester later in the year; was it not then communicated by the population of Liverpool to the population of Manchester? It may have been so communicated. Epidemics are unquestionably transmitted from one place and people to another; but who will pretend to assert that, if all intercourse had been cut off between Manchester and Liverpool, quarantine had been established, and a *cordon sanitaire* had been drawn, such as was enforced in Prussia when cholera prevailed, that Manchester, with all the materials of disease in its streets, would never have suffered from an epidemic of small-pox. Isolated cases of small-pox existed all the while in Manchester; the seeds of an epidemic were there, and would not the causes which generated the epidemic in Liverpool have led to the same result in Manchester? At any rate, the evolution of the epidemic in Liverpool could not be traced to external contagion; and the problem remains for solution,—why did the deaths from small-pox rise so rapidly, that at last 418 individuals perished in three months, while the ordinary mortality in Liverpool and West Derby, from small-pox, is 27 in three months?"

The upshot of all such inquiries is—that we know nothing of the matter. It has been supposed, indeed, that epidemics are generations of infusoria. But they have not been seen, and why should they spring up as they do, and appear only at distant intervals? In the present state of knowledge, it is more useful to study the phenomena of epidemics, and determine their more certain and obvious laws. Such there appear, in this instance, to have been.

Mr. Farr terms the ten quarters in which the deaths were registered the ten periods, the first quarter the first period, the second the second period, &c. &c. The mortality increased up to the fourth registered period; the deaths in the first were 2,513, in the second 3,289, in the third 4,242; and

it will be perceived at a glance that these numbers increased very nearly at the rate of 30 per cent. For, multiply 2,513 by 1.30, and it will become 3,267; multiply 3,267 by 1.30, and it will become 4,248. The rate of increase is retarded at the end of the third period, and only rises 6 per cent. in the next, where it remains stationary, like a projectile at the summit of the curve which it is destined to describe.

The decline of the epidemic was less rapid than its rise, and the mortality was somewhat greater in the autumns of 1838 and 1839 than in the summers. But, by taking the mean of the deaths in the third and fourth period, the mean of the deaths in the fourth and fifth period, &c., &c., a regular series of numbers is produced.

DEATHS observed in the decline of the Epidemic.

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
4,365	4,087	3,767	3,416	2,743	2,019	163

DEATHS in a regular series.

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
4,364	4,147	3,767	3,272	2,716	2,156	1,635

The mortality from small-pox was greater in the metropolis than in all the other parts of England; and the rate of increase in the second, third, and fourth periods was 1.50, the deaths having been 506, 753, and 1,145. The rate of increase in the first and second periods was 1.97, the deaths were 227 and 506.

The decline of the epidemic in the metropolis is shown by the following numbers:—

METROPOLIS.

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1. Mean quarterly deaths registered	1,103	959	611	240	91
2. Calculated series	1,103	967	611	278	91

The rates vary with the density of the population, the numbers susceptible of attack, the mortality, and accidental circumstances; so that, to obtain the mean rates applicable to the whole population, or to any other portion of the population, several epidemics should be investigated. It appears probable, however, that the small-pox increases at an accelerated and then a retarded rate; that it declines first at a slightly accelerated, then at a rapidly accelerated, and lastly at a retarded rate, until the disease attains the minimum intensity, and remains stationary.

ON THE NATURE AND TREATMENT OF STOMACH AND URINARY DISEASES: BRING AN INQUIRY INTO THE CONNEXION OF DIABETES, CALCULUS, AND OTHER AFFECTIONS OF THE KIDNEY AND BLADDER, WITH INDIGESTION. By *William Prout*, M.D. F.R.S. Fellow of the Royal College of Physicians. Third Edition, much enlarged. London: John Churchill, 1841.

Dr. PROUT informs us in a Preface to this third edition of his valuable and well-known work, that it has been re-written, and the materials arranged on principles now for some years before the public. As these principles naturally include almost every disease to which organised beings are liable; with the view of familiarising them, and of rendering the different parts of the volume in some degree independent of each other, the leading points have been purposely repeated—a statement thus made at the outset, to obviate the charge of tautology.

The author, in presenting to the public the *results* of nearly thirty years observation and experience, has still kept in view, as much as possible, the *practical* character of his treatise. All chemical and physiological details, therefore, not urgently required, have been avoided. Such details *may* be given in a future volume. In the mean time, conscious of his fallibility and imperfections, the author invites the candid criticism of the *experienced* chemical pathologist, who alone is capable of appreciating his labours.

Dr. Prout need apprehend no other criticism than a candid one, if indeed he can look for criticism at all. We are inclined to doubt his meeting with any. The modesty and simplicity of the man combine with the scientific character of the work to disarm envy and defeat ill-nature. Few can have the wish, fewer, still, the power to display censoriousness. In reviewing such a book the task is made up of pleasure and profit, for to review, in this case, is to learn.

It is not often that we devote a lengthened space to new editions. But the one now before us is virtually a new work, and one so important in every point of view, so calculated to plant sound doctrines in men's minds, and to widen the sphere of their practical usefulness, that we shall depart from our usual plan, and examine it with some minuteness. We shall at all events endeavour to pick out the fresh matter, and present it to our readers, in this and a subsequent article.

The work consists of an Introduction and two Books.

The Introduction offers us an Outline of the General Physiology and Pathology of Assimilation, and of the Secretion of the Bile and of the Urine.

The First Book, on Functional Diseases, contains five Chapters. The *first*—General Observations on the Pathology of Aqueous Assimilation and Secretion; the *second*—General Observations on the Pathology of Saccharine Assimilation and Secretion; the *third*—General Observations on the Pathology of Albuminous Assimilation and Secretion; the *fourth*—General Observations on the Pathology of Oleaginous Assimilation and Secretion; the *fifth*—General Observations on the Pathology of the Incidental Matters of Organised Bodies.

The Second Book, on Mechanical Diseases, contains seven Chapters. The *first*—Of the Origin and Increase of Calculous Deposites in the Kidneys; the *second*, Of Diseases of the Kidneys, produced by, and liable to be confounded or associated with, Calculus in those Organs; the *third*, Of the Origin and Increase of Calculi in the Bladder; the *fourth*—Of Diseases in the Bladder and its Appendages produced by, and liable to be confounded or complicated with, Vesical Calculi; the *fifth*—Of Hæmorrhage from the Urinary Organs in general; the *sixth*—Of Suppression, Retention, and Incontinence of Urine; the *seventh*—Observations on the Removal of Calculi from the Bladder; comprising Remarks on the Effects of Solvents for the Stone, and on the Operations of Lithotomy and Lithotritry; with a Review of the circumstances which ought to determine the choice of one of these means in reference to the other, or which render all of them dangerous.

It will at once be obvious to those who are acquainted with the former editions of this work how much is new in the present.

The INTRODUCTION of the volume presents us, to borrow Dr. Prout's own phrase, with the *staminal principles* of the work itself. Though it has been present in parts before the public before this, it has never been embodied in so consistent or complete a form. We shall therefore offer what we deem a sufficient account of it.

The first section, which treats of the ultimate composition and structure of organised bodies; and of their general physical characters as dependent on their composition, we pass over, with the simple announcement of Dr. Prout's belief in the existence of an independent vital principle, or principles. All other hypotheses he looks on as absurd.

Of Alimentary Proximate Principles.—For many years past, Dr. P. has been accustomed to divide these into four great classes, or groups, denominated the *aqueous*, the *saccharine*, the *albuminous*, and the *oleaginous*.

Of the Aqueous Alimentary Principle.—Water, observes Dr. Prout, constitutes not only the medium in which most organic operations are performed; but its elements, either as water or separately, enter into the composition of every living organised being. The subject of water, therefore, in a physiological point of view, may be considered under two heads, as the medium in, or by means of which, all organic operations are performed; and as an alimentary principle.

The proportion of water entering into the composition of organised beings is so remarkable as to appear almost incredible. Not only does the blood contain four-fifths of its weight of water, but even the parts of the body termed *solids*, that is the muscular mass of which animal bodies chiefly consist, contain in reality only about one fourth of solid matter. As an instance in illustration, we may mention a fact stated by Blumenbach, viz. that a perfectly dry mummy of an adult Guanche, in his museum, preserved with all the muscles and viscera entire, did not exceed seven pounds and a half in weight.*

* The original inhabitants of the island of Teneriffe are called Guanches. See the Introductory observations to Blumenbach's Physiology.

The water thus constituting so large a proportion of living animal bodies is the medium by which all vital agencies are performed. In the blood, for instance, the solid organized particles are transported from one place to another; are arranged in the place desired; and are again finally removed and expelled from the body, chiefly by the agency of the water present. Water also imparts to the more solid constituents of the frame that peculiar flexibility and power of extension so characteristic of animal solids.

The quantity of water they possess, is continually changed by the operations of organic bodies. The lungs, the skin, the act of drinking, the kidneys, all affect it. And water, and its elements enter into all organic processes.

Of Saccharine Alimentary Principles.—These include a very large class of substances, the general composition of which appears to be similar; that is to say, they consist of a combination of carbon and water in various proportions. The saccharine principles are chiefly derived from the vegetable kingdom, and indeed constitute what may be called, by way of distinction, *vegetable aliments*. As employed by man, some of them exist in the crystallised form, which, from the simplicity of their composition, they readily assume. Of crystallisable saccharine bodies, the chief are *sugar* and *vinegar*; of uncrystallisable or organised bodies, the most remarkable are the different forms of the *amylaceous* or *starchy principle*; the different forms of *lignin* or the *woody principle*; and the different forms of *gum*, or the *mucilaginous principle*.

Sugar is the only crystallisable product employed in considerable quantity as an aliment; and by the perfectly healthy stomach seems to be readily assimilated. There are, however, certain states of disease in which this organ appears to lose, in a great measure, the power of assimilating it.

Vinegar or *Acetic Acid* is constituted like sugar, from which it is readily produced. It has been employed by mankind, in all ages, in greater or less quantity, as an aliment; that is, substances naturally containing it in small quantity have been employed as aliments; or it has been formed artificially from certain bodies with the view to alimentary purposes. Like sugar, this principle appears to be more difficult of assimilation in its pure or crystallisable form, than in that state of mixture or union in which, for the most part, it naturally occurs.

Lactic Acid may be capable of becoming an aliment; but as it is often found unchanged and even developed in the stomach, and indeed in almost all parts of the animal system, it is probably less digestible, and therefore less adapted as an aliment, than the acetic acid.

The remaining saccharine principles are never crystallised, and may be said to be organised.

The *amylaceous* or *starchy* principle, as an aliment, is principally derived from the seeds of the cerealia or corn tribe; but varieties of this principle are found in the roots and other parts of many plants; as arrow-root, from the roots of the maranta tribe: potato-starch, from potatoes; sago, from the pith of the sago palm, &c.

The *amylaceous* principle is readily assimilated by the healthy stomach, and directly or indirectly forms a constituent of the food of most of the higher animals, as well as of man. It differs, therefore, from sugar, in

being a *necessary* article of food, without which animals could not exist; while sugar is not. Hence a much larger quantity of amylaceous matter, than of sugar, can be taken; and what is a still more decisive fact, the use of this larger quantity of amylaceous matter may be persisted in for an unlimited period, which it appears is not the case with a large proportion of sugar.

Lignin, so far as it has been examined, consists of equal parts of carbon and water. It forms the appropriate food of numerous insects and of some of the lower animals, but of few of the higher classes of animals. The reason of this is probably to be sought for, in their not being furnished with organs proper for comminuting and reducing it; for when lignin is comminuted and reduced by artificial processes, it is said to form a substance analogous to the amylaceous principle, and to be highly nutritious.

The *gummy* or *mucilaginous* principles form a very numerous class of bodies, nearly allied, if not actually belonging, to the saccharine group, into which they appear to merge by imperceptible grades. As instances of these principles in their well-marked forms may be mentioned, the *sugar of milk*, among crystallised, and *gum arabic* among the uncrystallised bodies.

Dr. Prout doubts whether these are adapted for human aliment, for an unlimited time.

Albuminous Aliments are principally derived from the animal kingdom. Hence they are not inappropriately termed *animal aliments*. None of them exist naturally in the crystallised state; nor can they be made to crystallise by artificial means. Yet certain modifications of them readily assume the crystallised form, and in diseased conditions of the animal economy, in which such modifications occasionally exist in large quantity, they often concrete into masses, and prove a source of secondary disease, as will be shown hereafter.

Dr. Prout describes seriatim the different forms of *albumen—gelatin—fibrin—curd—and gluten*. This latter, though chiefly derived from the vegetable kingdom, and, more especially from the seeds of the cerealia, and particularly wheat, is analogous to the albuminous principle, in containing azote, and in being capable of separation into two portions, analogous to gelatine and albumen. Hence the superiority of wheat.

Oleaginous Aliments.—However various their forms, these are essentially composed of olefant gas and water. They are naturally separable into two principal divisions—*fixed and volatile oils*. *Alcohol*, conforming, in composition to the fixed oils, more nearly resembles in properties the volatile. The principal fixed oils employed by man, and derived from the animal kingdom, are *suet, lard, butter, train oil, &c.*, while from the vegetable kingdom we have *olive oil, nut oil*, and a variety of others.

Such, says our author, are the four great alimentary principles, by which all the higher animals are nourished, and of which their bodies are essentially constituted; and if we regard carbon as the elementary principle by which, *cæteris paribus*, the nutritive powers of three of the alimentary principles are measured or represented, (which, in a certain point of view, may be considered to be the case,) we shall find them to stand in the order in which they have been above described; that is, the saccharine principles contain on an average from forty to fifty per cent. of carbon; the albuminous (in-

cluding azote) from fifty to seventy-five per cent.; and the oleaginous about eighty per cent. of this principle. These staminal principles readily pass under the influence of the organic agents into one another. They are all susceptible of transmutation into new principles according to certain laws: thus the saccharine principle is readily convertible into oxalic acid; or, under other circumstances, into the modification of the oleaginous principle, alcohol. The proportion of these modifications to the staminal principles is extremely limited.

Dr. Prout concludes, that a diet, to be complete, must contain more or less of all the four staminal principles. Such at least must be the diet of the higher classes of animals, and especially of man. It cannot indeed be doubted that many animals, on an emergency, have the power of forming a chyle from one or two of these classes of aliments; but that the higher animals can be so nourished for an unlimited time is exceedingly improbable. Nay, if we judge according to what is known from universal observation, as well as from experiments which have been actually made by physiologists regarding food; we are led to the directly opposite conclusion, namely, that the more perfect animals could not exist on one class of aliments; but that a mixture of three at least, if not of all the four staminal principles, is necessary to form an alimentary compound well adapted to their use.

Dr. Prout cites as an instance—*milk*, with its water, saccharine principle, caseous or albuminous principle, and oily principle—an instance of such combination in an obviously natural description of aliment. It is impossible, however, to name a substance constituting the food of the more perfect animals which is not essentially a compound of three, if not four of the great principles of aliment. This circumstance saves many animals the labour of forming the great proximate principles from their elements. The inferior animals do this; and hence there is a series, from the lowest being that derives its nourishment from carbon and carbonic acid, up to the most perfect animal existing: each individual in the series preferring to assimilate other individuals immediately below itself; but having on extraordinary occasions the power of assimilating all, not only below but above itself, in the system of organised creation.

OF THE PROCESSES OF ASSIMILATION.

Dr. Prout divides the processes of assimilation into two great classes, the primary and secondary. The primary assimilating processes comprise the process of digestion, and all the intermediate processes up to sanguification, inclusive; while the secondary assimilating processes comprise the processes by which the different textures of which the living body consists, are first formed from the blood; and afterwards re-dissolved and removed from the system.

In both the processes of assimilation, *water* plays an important part. It enters into the composition of most organised bodies in two separate forms; that is, water may constitute an *essential* element of a substance, as of sugar, starch, albumen, &c., in their *driest* states; in which case the water cannot be separated, without destroying the *hydrated* compound. Or water may

constitute an *accidental* ingredient of a substance, as of sugar, starch, albumen, &c., in their *moist* states, in which case, more or less of the water may frequently be removed without destroying the essential properties of the compound. A large proportion of organized bodies contain water in both these forms.

"These," says our author, "containing small proportions of combined water are usually of a firm and stable character, and in common language are said to be *strong* or *high*; while those containing larger proportions of combined water are usually of a delicate and unstable character, and are said to be *weak* or *low*; thus we read of strong and weak sugars, glues, &c., varieties of these principles which are found to owe their peculiar properties to the less or greater proportions of combined water they contain. The processes of converting strong bodies into weak and *vice versâ*, are with difficulty accomplished artificially; for instance, though we can in some respects make a strong sugar weak, in no instance do we appear to be able to reverse the process, and to convert a weak into a strong sugar. As these processes, however, constitute some of the most frequent and important of all the processes of a purely chemical character taking place in organised compounds, it becomes necessary to distinguish them by appropriate appellations; and for this purpose I have been long accustomed to indicate the change of a strong into a weak principle, by the term *reduction*, and *vice versâ*, the change of a weak into a strong principle, by the term *completion*—a nomenclature which will be subsequently adopted throughout these pages, and which the reader is desired to bear in mind." xx.

Dr. Prout views the primary assimilating process as of two kinds. From the stomach to the duodenum inclusive, the operations are all of a *reducing* kind. The *low* and reduced aliments enter the lacteals as chyle. They are now gradually *raised*, and, by the respiratory process, they are rendered *complete*.

The reducing portion of the assimilating process presents three forms.

"First, the stomach has the power of dissolving alimentary substances, or of bringing them into a semifluid condition. This operation seems to be altogether chemical, and probably essentially consists in the combination of alimentary substances with water; that is, in *reducing* the alimentary substances from a high to a low condition. Secondly, the digestive aliments, or the chylous portion of the chyme taken up by the lacteals, though the proportions of its different ingredients may vary, is always essentially the *same* in its composition. The digestive organs, therefore, and more especially the stomach, must possess the power, within certain limits, of changing into one another the simple alimentary principles formerly described. This part of the operations of the stomach appears, like the reducing process, to be *chemical*; but not so easy of accomplishment. It may be termed the *converting* operation of the stomach. Thirdly, the crude and dead aliments undergo changes in the stomach, &c., which render them fit to be brought into contact and even union with the *living* animal body; the stomach and assimilating organs, therefore, must possess the power of *organising* and *vitalising* the different alimentary substances. It is impossible to imagine that such organising agency of the stomach can be chemical. This agency is *vital*, and its nature is completely unknown." xxi.

The *solvent power* of the stomach is described by Dr. Prout. It seems essentially to consist in effecting the more intimate combination of the alimentary principles with water. This is mainly due to the action of the gastric juice. Of this important secretion, says Dr. P. *chlorine*, in some state or other of combination, is an ingredient—it would seem a *necessary*

ingredient; for the secretion in its healthy state always contains more or less of chlorine.

The chlorine of the stomach is exceedingly liable to derangement. Often a large quantity of free muriatic acid is elicited instead, a source both of uneasiness and interference with the reducing process.

The source, says our author, of this chlorine or muriatic acid must be the *common salt* which exists in the blood; to suppose that it is generated, is quite unnecessary. The chlorine, therefore, is separated from the blood, at least in part; and it may be demanded what is the nature of the agency capable of separating the chlorine from a fluid so heterogeneous as the blood? That agency he considers a *modification* of electricity, common electricity being manifestly unequal to the operations effected.

What then becomes of the soda? This, says Dr. Prout, remains behind, or is absorbed into the mass of blood, and a portion of it no doubt is requisite to preserve the weak alkaline condition essential to the fluidity of the blood. But the larger part of this soda is probably directed to the liver, and is elicited with the bile in the duodenum; where it is thus again brought into union with the acid, which had been separated from the blood in the stomach. "Admitting," he adds, "that the decomposition of the salt of the blood, &c. is owing to the immediate agency of a modification of electricity, we have in the principal digestive organs a kind of galvanic apparatus, of which the mucous membrane of the stomach and intestinal canal, generally, may be considered as the acid or positive pole, while the hepatic system may, on the same view, be considered as the alkaline or negative pole."*

Many of our readers are aware that this is an old notion of Dr. Prout's. Fanciful, as no doubt it is, the facts that it attempts to explain subsist, unaffected by its stability or otherwise.

Other acids, and particularly the lactic acid, are occasionally, if not always present during the digestive processes. Dr. Prout's own opinion is that, though frequently present in the human stomach, it is rather to be considered as the result of unnatural irritation, produced by disease, indigestible aliments, &c. than as a healthy product *necessary* to the digestive process. The source of the lactic acid, also, is probably different in different instances. Sometimes it may be derived from the food; at other times, and that most frequently, it seems to be immediately derived, like the muriatic acid, from the blood itself. The lactates exist in the blood, and it may in part be derived from the lactates already formed in that fluid. There is, however, every reason to believe, that when very abundant, it is derived from the decomposition of the blood in the extreme vessels of the stomach, &c.

* "This notion or opinion, which was first advanced by me many years ago, seems to have lately received some confirmation from the experiments of Matteuci, who found that when the liver and stomach of a rabbit were connected with the platinum ends of the wires of a delicate galvanometer, a deviation of the needle amounting to fifteen or twenty degrees took place. This action became very feeble or entirely ceased, after the death of the animal: hence he inferred that it depended on the vital action of the organs, and not on the differences of the chemical properties of their secretions. Matteuci, *l'Institut*, No. 75."

Another acid, an occasional result of unhealthy assimilation, is the oxalic. Its relation to the saccharine elements may sufficiently explain its development. It may also be taken into the stomach as an alimentary matter, for instance, in the stalks of rhubarb, sorrel, &c. Small quantities of oxalic acid thus developed or introduced into the stomach, do not appear to give much uneasiness in that organ; and when introduced, it may in some instances, like other saccharine derivatives, be assimilated. It is secondarily that the oxalic acid proves formidable.

As to the butyric, acetic, carbonic, and other acids occasionally met with during the digestive processes in the stomachs of animals; these are probably in a great degree the results of indigestion, and derived from the mal-assimilation of the alimentary matter.

Of the Converting Powers of the Stomach, &c.—Chyle is remarkably uniform, with great varieties of food. Though the albuminous and oleaginous principles need undergo no change, yet the saccharine must. The changes are probably chemical, though Dr. P. admits that we cannot trace the conversion of sugar into albumen. Whence comes the azote of the albumen? Dr. Prout believes that it may, in some instances, be derived from the air or generated; but that, under ordinary circumstances, it is principally furnished by a highly azotised substance (organised urea?) secreted from the blood, either into the stomach or duodenum, or into both these localities; and that the portion of the blood thus deprived of its azote, is separated from the general mass of blood by the liver, as one of the constituents of the bile; which secretion, as a whole, is remarkably deficient in azote.

Under ordinary circumstances, then, the converting powers of the stomach must essentially consist of the three kinds mentioned, viz. the conversion of saccharine aliments into albuminous and oleaginous principles; the conversion of albuminous principles into oleaginous principles; and the conversion of oleaginous into albuminous principles.

Of these, the first is the most important. As it belongs also to vegetables, it is, perhaps, the lowest step in alimentary renovation. The derangement or partial suspension of the power of converting the saccharine principle in man, not only constitutes a formidable species of dyspepsia; but the unassimilated saccharine matter, in passing through the kidneys, gives occasion to the disease termed *diabetes*.

Of the Organising and Vitalising Powers of the Stomach, &c.—Of these we know absolutely nothing, and we need not, therefore, discuss them.

In the *duodenum* the acid of the stomach combines with the alkali of the bile, and the albuminous principles are fully developed, and begin to separate from the excrementitious. In the *lacteals*, the water is gradually removed, and the completing process goes on.

OF THE SECONDARY ASSIMILATING PROCESSES.

Dr. Prout thinks it necessary to enter into an explanation of the sense in which he uses these terms.

“The secondary assimilating processes include two great divisions, which,

for the sake of distinction, may be termed the *formative* and the *destructive*. Under the head of the secondary formative assimilating processes, are included the different processes by which the principles of the blood are converted into the different tissues composing animal bodies, as well as the different secretions designed for ulterior purposes in the economy: while under the head of secondary destructive assimilating processes are included the extinction (secondary digestion) of the different tissues of the body, and their conversion, either into new principles designed for ulterior purposes; or into disorganised products designed to be removed from the body, or more frequently into products belonging to both these classes of substances." xxxiv.

Dr. Prout thinks it requisite thus to explain the general principle on which these different processes are conducted.

"When a definite substance, like the albumen of the blood, for instance, is converted into one or more new principles, either the entire elements composing the albumen must be re-arranged so as to produce a principle having new and different sensible properties; or what appears to be infinitely more common, and indeed the rule, the elements of the simple principle must be so arranged as to form *two* (or more) principles, either of which may be said to be *complementary* to the others; that is, the composition of one (or more) of the new principles must be such, as, in conjunction with the remaining principle, will *complete* the albumen, from which all the new principles were originally formed.*

Complementary decomposition is at least of two kinds; a substance may be changed into a new principle designed for ulterior purposes, and another principle designed to be excrementitious; e. g. albumen may be decomposed into gelatine, and hydrated carbon capable of becoming carbonic acid on exposure to air in the lungs. Or a substance may be decomposed into two principles, both of which may be designed for ulterior, or both for excrementitious purposes. Instances, perhaps innumerable, of these two forms of change are constantly taking place in the animal economy; though the first seems more naturally to belong to healthy action; the second to disease. Thus albumen and gelatine are converted into principles, one or both of which are applied to further uses in the economy; whereas, in peculiar states of disease, gelatine in particular appears to be almost wholly converted into some modification of the saccharine principle and urea; both of which from their properties may be considered as excrementitious." xxxv.

As an instance of the decomposition of a principle into three or more complementary principles, Dr. Prout cites gelatine, which is often converted into oxalic acid and the carbonate of ammonia.

Dr. Prout next touches on the *incidental* elements contained in organized bodies. Their incidental mineral matters are supposed to be as fixed and definite, both in their nature and quality, as the essential elements of which such bodies consist. Thus the nervous mass is characterised by the presence of phosphorus; a peculiar tissue intimately connected with the nervous, by

* "The part that water plays in complementary decomposition is often very important, and, to prevent misconception, deserves to be noticed. The original substance to be decomposed is often decomposed + or - water; that is, the complementary principles into which a substance is decomposed, do not exactly make up the substance as it usually exists, but the substance, plus or minus, one or more proportions of water. This circumstance is of such frequent occurrence in organic decompositions, as almost to constitute the rule rather than the exception."

the presence of magnesia; certain submucous tissues, by the presence of lime, &c. Dr. Prout agrees with Berzelius in general, that such incidental matters usually exist in their elementary condition in organised products, and not as binary compounds; and that they assume the form of binary compounds or oxides, in which they commonly appear, during the destruction of the organised principle.

Dr. Prout would deduce as important practical inferences from these facts—that when incidental mineral matters appear as binary compounds among organised products, the mal-assimilation or destruction of organised tissues is not only indicated; but the exact nature of the tissue thus mal-assimilated or destroyed, may be predicated from the nature of the binary mineral compound.

Dr. Prout now passes to the leading formative and destructive processes of secondary assimilation.

Gelatification is that process, by which a certain portion of the fluid albuminous principle of the blood is converted or assimilated into the solid gelatinous tissues of living beings. The gelatinous tissues are the staminal and fundamental ones of the body. The process of gelatification takes place in the extreme capillary blood-vessels, and at the moment when the arterial is converted into venous blood; a phenomenon, therefore, intimately connected with, if not in some degree dependent on, the gelatifying process. Dr. Prout, in his Bridgewater Treatise, attempted to shew that when albumen is converted into gelatine, carbon is eliminated, which carbon (partly perhaps in a hydrated, partly in an oxygenated form,) remains associated with the venous blood till its arrival in the lungs; where, by combining with the oxygen of the atmosphere, it becomes fully oxygenated, and is converted into carbonic acid gas, and in this form makes its escape from the body.

Albumification, the process by which the fluid albuminous principles of the blood are converted into the solid albuminous tissues of living bodies. Albumification, therefore includes albumification properly so called; or that process by which the albumen of the blood is converted into the albuminous textures of the body; and *fibrification*, or that process by which the fluid fibrin of the blood is converted into the solid muscular fibrin of animals. During these processes, water must be eliminated.

The changes undergone by the oleaginous matters cannot be exactly stated. They undergo certain depurating processes, the separation of water not being the least important.

Another class of processes of the formative kind, belonging to the secondary assimilation, some of which are connected more especially with gelatification, others with albumification, are the formation of solid matters, as of bones, horns, hair, &c. &c. While still another class may be supposed to include the different fluid secretions derived from albuminous and oleaginous matters, and destined for ulterior purposes; such as the saliva, the different gastric secretions, the spermatic fluid, various oily or resinous secretions, &c.

Dr. Prout passes on to the secondary assimilating process of the *destructive kind*.

Of the Ulterior Changes of the Gelatinous Tissues.—Dr. Prout rather thinks that, to a certain extent, these tissues are converted, in the healthy state, into materials of a higher kind. But the more common ulterior alterations are of another description. He has long conceived that one mode in which

the gelatinous tissues become effete, is by their conversion into two classes of complementary principles, of which urea, or its equivalent, constitutes one principle; and the saccharine principle in some of its forms, (most frequently in the form of lactic acid,) the other. Both these classes of complementary principles escape by the kidneys in their crystallisable forms, in large quantities; particularly the urea; the lactic acid, escapes, also, from the skin, and from other parts of the body. These changes become mischievous only when excessive, or otherwise abnormal: for example, when the urea is converted into the carbonate of ammonia, or the saccharine principle into oxalic acid, &c.

Of the Ulterior Changes of the Albuminous Principle.—They are little understood. He has no doubt that certain portions do become effete, and are eliminated. He thinks that one of the crystallisable principles thus formed from albumen during the secondary destructive assimilating processes is lithic acid, most usually in the state of lithate of ammonia. The class of substances complementary to the lithate of ammonia appear to consist of certain ill-defined principles, to be alluded to hereafter—the formation of lithic acid or its compounds in excess, proves a source of disease. And Dr. P. suspects that many formidable diseases are occasionally connected with the destructive mal-assimilation of the albuminous principles; from which principles various matters of a highly deleterious character, and related to the poisonous principle cyanogen, as a basis, may be readily supposed to be eliminated.

Of the Ulterior Changes of the Oleaginous Principle, we know even less than of the albuminous. But the large proportion of oleaginous matter which enters into the composition of the nervous mass, shows the important part which oleaginous matters perform in the animal economy; and the disappearance of fat during the process of hybernation, and under many other circumstances, indicates that this principle is most extensively appropriated during the secondary destructive assimilating processes.

On the General Pathology of the Primary and Secondary Assimilating Processes.

This section may be said to give their signification and application to the preceding details.

Primary Mal-assimilation is mal-assimilation in sanguification. It may occur—*a.* during the digestive processes taking place in the stomach; *b.* during the processes taking place in the duodenum; and *c.* during the subsequent processes taking place in the chyliferous system; or in all these localities simultaneously.

a. Mal-assimilation during the *digestive* processes, may more especially belong to the reducing, the converting, or the vitalising functions of the stomach.

Mal-assimilation most frequently commences with derangement of the *reducing* process of the stomach. When any substance incapable of being reduced or dissolved is taken into the stomach, even in its healthy condition, one of the first effects produced is the secretion from the stomach, of a large quantity of acid, of which the *lactic* acid appears to constitute a chief in-

gradient. The effects of such acidity, immediate and remote, need not be insisted on, and what is not reduced or dissolved, can never be *converted*, much less *vitalised*.

Derangements of the *converting* function occasionally constitute an original disease, the effects of which are still more formidable than those arising from disordered reduction. Thus in diabetic affections, the reducing function of the stomach seems, in some instances, to be almost morbidly active; and farinaceous (and even other) matters are reduced to the condition of low saccharine matter, which the converting function of the stomach is incapable, as in health, of changing into the elements of chyle or blood. The consequence is, that this reduced or dissolved saccharine matter is taken up with the little chyle that may be formed; and after producing various derangements in its transit through the system, is ejected with the urine. Again, the converting process may be wrongly performed; the saccharine matter, for instance, instead of being converted into chyle, may be converted into oxalic, lactic, or other acid and deleterious matters, which may not only produce much local discomfort, but serious disorder in their subsequent passage through the sanguiferous system and kidneys; or even through the bowels.

Or the *vitalising* process may be alone suspended or deranged. Thus, when more food is taken by healthy individuals, than is required for the purposes of the animal economy, such superfluous matters are finally elicited either with the bile; or, in the form of lithate of ammonia in the urine.

b, Primary mal-assimilation in the duodenum appears to be more generally the result of mal-assimilation in the stomach, than an original state of disease. The acid matters resulting from the disordered reducing powers of the stomach are not neutralised in the duodenum, and great uneasiness is the result. A portion of the acid is probably absorbed with the chyle.

"In slighter cases of a temporary character, the effects pass off, and all becomes right again; but in severe and protracted cases, arising from derangements of the digestive organs, connected with inveterate constitutional diseases, or from long exposure to strong exciting causes, as malaria, &c. the case is different; and the acid and unnatural matters make their way from the chylic system into the abdominal veins; the blood in which vessels often become quite black, and sometimes acid. Now as this unnatural blood passes through the hepatic system, the functions of the liver become disordered, and the bile, if not actually rendered acid, at least loses its neutralising properties; and thus the mischief becomes perpetuated. An extreme case is here supposed for the sake of illustration; such, perhaps, as it occurs in the remittent fevers of tropical climates only; but similar phenomena appear in an infinite variety of forms and grades, as the results of mal-assimilation, in all climates." xlv.

It will be observed that Dr. Prout accounts, in this chemical, possibly too simple, fashion, for the furious remittent fevers of the West Indies and of Africa. We cannot, however help suspecting that the operation of malaria is of a deeper and more recondite description. It is right indeed to add that Dr. Prout admits that a variety of other unnatural matters of a complementary character, many of them of an acid, perhaps of a poisonous character, must likewise be generated, and thus contribute, in various ways and degrees, to aggravate the disorder.

c. Dr. Prout believes that the consequences of primary mal-assimilation of the lacteal system are most important, especially in the earlier periods of

life and adolescence. Dr. Prout advances some opinions on this subject, which we cannot help thinking will take our readers by surprise.

"Now, in early life, under such circumstances, from some causes which I do not profess to explain; but probably from causes connected with original weakness or deficient action of the assimilating organs and of the kidneys; or rather, in short, of the whole system; the imperfectly assimilated chyle in passing through the lacteal system, either does not undergo the necessary changes by which chyle is converted into blood; or is mal-converted into the comparatively insoluble pseudo-albuminous matter of struma; which in passing through the lungs lays the foundation (perhaps at first mechanically) of tuberculous deposition, and future accretion. Whether or not this be admitted, I believe no one will deny who has studied the subject, that about the age we are now considering, the assimilating organs in strumous and consumptive habits are peculiarly deranged; and that great attention to diet, &c., at this age, (when diet is least apt to be attended to, and all sorts of crudities are taken,) will not only sometimes ward off those phthisical attacks, which, when once established, will inevitably run their fatal course; but prevent many nearly allied diseases in after life."*

Setting aside the more severely chemical part of the evidence there do appear some circumstances which favour the notion of the connexion of struma and a tendency to form lithic acid—we allude to the acidity in the *primæ viæ*, and to the tendency to lithates in the urine of those weakly children who are also subject to struma. But, on the other hand, we are staggered when we contrast the rude health, plethoric habit, and, seemingly, strong constitution of the gouty man, with the delicate organization, weakly frame and valetudinary condition of the scrofulous. At first sight, no two affections can seem more opposed than gout and phthisis. Whether chemistry is in the right, or more simple observation, we shall not venture to pronounce.

Of Secondary Mal-Assimilation.—The entire suspension, says Dr. Prout, of the formation of the gelatinous processes from the blood is probably incompatible with life; but the mal-formation and consequent imperfect development of gelatine seems to take place in a variety of degrees and modes. Circumstances also appear to show, that destructive mal-assimilation is equally, if not more frequent than the formative mal-assimilation of the gelatinous tissues; at least as far as regards the class of derangements we are now considering. It is probable, however, that in all instances, both formative and destructive mal-assimilation not only of the gelatinous, but of

"Strumous, lithic acid, and gouty diseases, are all the results of mal-assimilation of the albuminous principle, either primary or secondary; and often gradually run into each other. Thus gout and struma are frequently, if not always, associated; and the gouty chalkstones of old age may be considered as little more than modifications of the scrofulous tubercle of youth, both being alike formed from mal-assimilation of the albuminous principle. Moreover, the offspring of those labouring under gout and struma are (other circumstances being favourable) more subject, during the period of adolescence, to tubercular phthisis, than other individuals. Large deposits of the gouty chalkstone, in middle or advanced age, are often accompanied by incipient disease of the kidneys." xlvii.

all the other tissues, takes place in a greater or less degree simultaneously. As illustrative of these remarks we may observe, that during the secondary formative assimilating processes, instead of gelatine, various unnatural compounds, as sugar, oxalic acid, &c., may be produced; which may not only interfere with the immediate functions of the organs affected, but with the functions of remote organs, as the kidneys, &c., destined to remove such unnatural matters. Again, during the secondary destructive assimilation of the gelatinous tissues, not only the same unnatural matters, as well as others, derived from them, may be generated; but matters of a complementary nature, and of a still more injurious character, may be produced.

Similar remarks, says our author, are applicable to secondary mal-assimilation of the albuminificating processes. As instances of the unnatural matters developed during the secondary mal-assimilation of the albuminous tissues; strumous matters, the gouty chalkstone, &c., may be mentioned as developed by formative mal-assimilation; while instead of the lithate of ammonia, which seems to be naturally developed during the destructive mal-assimilation of these tissues, various poisonous principles having relation to the lithic acid in their composition, such as the different compounds of cyanogen, &c., before alluded to, are in some instances undoubtedly generated, and prove the source of formidable secondary derangements, and even of death itself.

Mal-assimilation of the oleaginous principles is of equal, if not greater consequence than the albuminous and gelatinous.

The following remarks of Dr. Prout seem to us extremely just.

"When too much food is taken relatively to the constitution of an individual, either the primary or secondary assimilating processes, or both, may more especially suffer. In some instances, the primary assimilating organs are so weak and so easily deranged, that individuals are constrained to be careful, both with respect to the quantity and quality of their food; and such individuals often escape the more serious and deeper-seated diseases of a secondary kind, arising from excess. On the other hand, there are individuals whose primary organs will permit them to take with impunity enormous quantities of all sorts of matters. In some of these instances, such matters pass off by the bowels very little assimilated; in others, a large portion of them undergo, more or less perfectly, the primary assimilating processes, and are carried into the mass of blood; and individuals in whom this takes place, suffer more especially from derangements of the secondary assimilating processes; as from hepatic congestion, gout, &c., particularly about the middle periods of life, when the consequences of excesses of all kinds begin to be manifested." 1.

Dr. Prout points out the connexion between hypertrophy and dropsy. But it does not call for more particular notice. He observes that, when the mal-assimilation is chiefly confined to the gelatinous tissues, the derangements are more especially displayed in the form of certain cutaneous affections, destructive suppuration, or other disease, of the cellular tissues: likewise diabetes, oxalic acid affections, &c. When the development, &c., of the albuminous tissues is chiefly deranged, organic diseases of various kinds connected with these tissues, also lithic acid gravel, &c. are usually the result. Finally, when the mal-assimilation is excessive, and involves the oleaginous in conjunction with the other tissues, the consequence is usually some form of malignant or incurable organic disease.

And, lastly, Dr. Prout insists upon the much more formidable character of secondary diseases depending on secondary mal-assimilation, than of secondary diseases the result of primary mal-assimilation.

We have a section on the general composition and properties of the blood. There is nothing in it to call for notice. He cites the well-known analysis of Lecanu, and remarks upon it:—One of the most obvious facts that first strikes our attention, is the conspicuous place, among the constituent principles of the blood, occupied by two of the great alimentary principles formerly described, viz. the albuminous and the oleaginous principles; while the third, the saccharine principle, is entirely absent. Even the animal (saccharine) principle gelatine, though existing abundantly in various structures, is never found in the blood, nor in any product of glandular secretion. The only constituent of the blood we can suppose to *immediately* represent the saccharine alimentary principle, is perhaps the lactic acid, which Berzelius places among the constituent principles of the blood, and of most animal products soluble in alcohol. M. Lecanu, however, has not specified the lactic acid among the results of his analysis; although there can be little doubt that this acid, if not always present, is at least very rarely absent from the blood.

The next section treats—

Of the functions of the liver, and of the relation of the bile to the assimilating processes. Of the composition of the bile: and of biliary concretions.

—Dr. Prout points out that the liver is of necessity a great depurating organ—but it also secretes matters absorbed with the chyle—the soda, for example, one. The account of the composition of bile is elaborate and, no doubt, precise. We must refer such of our readers as are anxious for it to the work itself. We may merely observe in the words of Dr. Prout—that the general results of all the analyses of the bile, then, as already stated, are—that the chief organic ingredients, in their general character and composition, partake of the oily character, and contain, probably, at least 80 per cent. of carbon; and—that the saline contents of bile consist principally of soda, which, if not in actual combination with the biliary ingredients, is at least in some other very loose state of combination.

Biliary Concretions—The most frequent are cholesterine in different degrees of purity. Then come gall-stones, consisting of inspissated bile. Biliary concretions composed almost entirely of the colouring matter of the bile are exceedingly rare in the human subject. And, lastly, Mr. Taylor has described an unique concretion, supposed to be biliary, of *stearate of lime*. We proceed to the eighth section—

Of the functions of the kidneys; and of the relation of the urine to the assimilating processes. Of the composition of the urine; and of urinary calculi.—Dr. Prout quotes from Rayer, and we feel disposed to quote again, the estimate of the latter gentleman, of the varieties in the weight and size of the organs in the two sexes, and at different ages, &c.

1. That the kidneys of individuals of the same age are never exactly of the same weight.

2. That immediately after birth, the development of the kidneys, though progressive, offers such differences, that in one case the weight of a kidney

of an infant of seventeen days old, may be strikingly less than the kidney of another infant of two days old.

3. That in infancy, adult age, and in manhood, the same differences in the weight of the kidney at the same age, are equally observable; so that the determination of atrophy or hypertrophy of the kidneys is not possible, unless the difference in the weight of the kidneys be very remarkable.

4. That the weight of the kidneys in women, particularly in old age, is less than in men.

5. That the left kidney generally weighs more than the right, at all ages.

6. That in old age the kidneys are generally as heavy as in the prime of life.

7. That when the kidney of an adult or old man, without any remarkable alteration of structure, varies much from three ounces (*French weight*), it ought to be regarded as having a morbid or an anomalous tendency; that is, a tendency to atrophy or hypertrophy congenital or accidental.

The size of the kidneys is not always proportional to their weight; but, generally speaking, the kidneys attain their largest size in adult age. As age advances, they usually become less in bulk, but firmer in consistence; so that, as above mentioned, the weight of the kidneys at this age, does not diminish in proportion to their bulk.

M. Rayer has found the size of the kidney to vary in males, between eighteen and forty-five years of age, from three inches ten lines long, one inch one line wide, and one inch one line in thickness; to four inches ten lines long, two inches six lines wide, and one inch and nine lines in thickness, (*French measure*.) On the contrary, in males between fifty-five and eighty years of age, the variations have been between three inches six lines long, one inch six lines wide, and one inch thick; and four inches two lines long, two inches four lines wide, and one inch and five lines thick. In females, the variations have been less remarkable.

Dr. Prout is now disposed to think, that if we suppose that the *quantity* of urine varies in this country from 30 ounces in the summer to 40 ounces in the winter, we shall be probably very near the truth, as regards a person in good health, and who does not drink more than the simple wants of nature require.

After long attention to the subject, too, he is of opinion that the standard specific gravity of the urine of a healthy person in the prime of life during the whole year in this country, scarcely reaches 1.020. If, therefore, we estimate the average specific gravity to range from 1.015 in the winter to 1.025 in the summer, we shall be probably very near the truth as regards the generality of well fed individuals, who are ordinarily reputed to be in good health.

Dr. Prout gives a table of the normal and abnormal constituents of the urine, and comments on each in detail. We shall only notice such remarks as may appear peculiar, or important. We introduce one in reference to *urea*.

"Urea was first analysed by myself, about twenty-five years ago; and from its composition I was satisfied that it might be formed artificially. I made numerous attempts to form it, but did not succeed; and the honour of forming the first organic product artificially, is due to Wöhler. Urea is supposed to be generated during the destructive assimilation of the gelatinous tissues, and probably always exists in the blood in minute quantity. In certain diseases, of the kidney, however, urea exists in the blood in considerable proportions; a fact established by Dr. Christison, and confirmed by many others." lxxiii.

And we quote too a practical hint that may be serviceable to those who are no great chemists. For practical purposes, an excess of urea may be shown

by putting a little of the urine into a watch-glass, and adding to it carefully about an equal quantity of pure nitric acid, in such a manner that the acid shall subside to the bottom of the glass. The mixture must be kept as cool as possible; and if under these circumstances a crystallised deposit be formed, an excess of urea is indicated. The degree of excess may be inferred, near enough for *practical* purposes, by the length of time which elapses before crystallisation takes place; which may be from a few minutes to two or three hours. The detection of a *deficiency* of urea requires a more elaborate process, which will be found detailed in most recent chemical treatises.

Dr. Prout sticks to his old opinion that the lithic acid exists in the urine, and is held in solution in combination with ammonia, and his reasoning appears conclusive.

Dr. Prout gives a full account of the recent researches of Liebig and Wöhler, on the changes which the lithic acid is capable of undergoing. They are too chemical, however, we might almost add too controversial, for our present purpose. We must content ourselves with stating, as Dr. Prout's conclusions, that the red colour of the urinary sediments is sometimes partially due to the action of the nitric acid on the yellow colouring matters of the urine—in short, that the lateritious and pink sediments of the urine partly depend on the purpurate of ammonia, or some modification of this compound, and partly on the altered yellow principle of the urine; that in different instances, and in different diseases, the two red colouring matters thus produced, are mixed in various proportions; and finally, that the one or the other colouring matter predominates, according to the nature of the disease.

Another point to which we may refer is the *cause* of the deposition of lithic acid in the free state. Now any acid, even the carbonic, added to healthy urine, will throw down the lithic acid, in a crystallised form, a proof that the urine contains no uncombined acid. "When therefore," says Dr. Prout, "the lithic acid is deposited from the urine in the crystallised form, the inference must be, that a free acid exists in the urine; and the question is, what is the nature of this acid? The answer, I believe, to this question is, that in the great majority of instances, the immediate cause of the precipitation of lithic acid gravel is the lactic acid. In some instances, the mineral or other acids may be the *remote* cause of the precipitation; that is, such acids may, from their stronger affinities for the bases present, combine with them and separate the lactic acid, which may thus act immediately as the precipitant, as just stated. In the greater number of instances of lithic acid gravel, however, the lactic acid seems to be actually secreted in excess; either separately, which is comparatively rare; or in a state of combination with urea, which seems to be the rule. Now, as urea has little or no neutralising power, the lactic acid in the lactate of urea exerts its acid powers, and by detaching the lithic acid from its natural state of combination with ammonia, precipitates it in the form of crystallised gravel. As corroborative of this opinion, it may be stated, that the lactate of urea may be sometimes obtained in large quantities from urine depositing lithic acid gravel. This explanation also leads to the explanation of another pathological fact, viz. the frequent presence of sugar in urine depositing lithic acid gravel; and *vice versa*, the frequent appearance of lithic acid gravel in slight forms of diabetic disease. The lactate of urea, and the saccharate of urea, are in fact

but modifications of the same substance, and may both be considered as the representatives of gelatine; the lactic acid being, as we have said, only a modification of the saccharine principle. Hence, by very slight variations in the action of the vital affinities, the acid or the sugar may predominate and give occasion to the phenomena in question. These remarks are also further interesting, since they illustrate certain facts mentioned in other parts of the volume, viz. that the appearance of sugar in lithic acid deposits, is an unfavourable symptom; while, on the other hand, the deposition of lithic acid gravel and of the lithate of ammonia in diabetic urine may be considered as favourable. In the first of these cases, a natural product, the lactate of urea, has given way to an unnatural product, the saccharate of urea; while in the second, the unnatural saccharate of urea, has given way to the natural products, the lactate of urea and the lithate of ammonia,—facts showing that both the gelatinous (saccharine) and albuminous matters are at least partly assimilated."

The *smell* of the urine has never been satisfactorily explained. It is probably connected with some indefinable compound, into which sulphur, phosphorus, and azote, largely enter. The smell of the urine also, as is well known, is liable to be much affected by various articles taken into the stomach, as asparagus, turpentine, &c.

Sulphur in Cystic Oxyde.—Dr. Prout admits the justice of the discovery already alluded to in another part of this Journal—that the cystic oxyde calculus contains sulphur. He says—

"I analysed this substance many years ago, and the analysis has been lately confirmed in all respects, except that one half of the matters which I *estimated* to be oxygen, has been proved to be sulphur. I had long suspected that this curious substance contained another principle besides the four usual constituents of organic products; and was about to verify my conjecture, when I heard of the above discovery. I suspected the presence of phosphorus rather than of sulphur." xciii.

Indigo in the Urine.—A substance supposed to be Prussian Blue has been met with in the urine. Braconnot has described a substance under the name of *cyano-urine*, occasionally found in the urine, and which sometimes tinges it blue. From its properties, this substance appears to be nearly allied to certain vegetable blues; and hence it may, as Mr. Rees has observed, be probably derived from some vegetable substance taken as food. Dr. Prout once met with an instance in which indigo was occasionally voided in the urine, in considerable quantity. The patient was a middle-aged man of a nervous temperament. He was in the habit of taking Seidlitz powders; and the indigo most generally appeared in the urine, in the form of a dark blue sediment, after taking one of these powders. The quantity was so considerable on one occasion, as to allow of its being collected and examined; when it was found to possess all the properties of indigo, and was obtained in a state of purity by sublimation.

Pus and Mucus.—Dr. Prout admits the difficulty of accurately distinguishing them. He adds—"Pus, however, when well-marked, may be distinguished from mucus by being essentially composed of *particles*. Hence, when diffused through the urine, which it readily may be, pus, after a time, again subsides to the bottom of the vessel, in the form of a pale greenish-

yellow pulverulent deposit; and the urine assumes its transparent character; properties by which pus is strikingly contrasted with mucus. Urine containing pus is also almost invariably albuminous; another property by which purulent urine is contrasted with urine merely containing mucus. A third circumstance by which pus and mucus are strongly opposed, consists in the character of the urine. Urine containing pus, particularly when of low or moderate specific gravity, is very often acid, and has little tendency to become alkaline; on the contrary, urine containing much mucus, if not alkaline when passed, speedily becomes alkaline and putrescent. Lastly, pus usually contains a little oily matter, which mucus does not.

The effects of alkalies on pus were, I believe, first pointed out by Mr. Cruickshanks, and these effects are occasionally of considerable importance in a pathological point of view. Thus urine containing both pus and mucus, sometimes becomes alkalescent; and the ammonia evolved converts the pus into a peculiar glairy substance, which imparts to the urine a ropy consistence. This phenomenon, which is not very common, always denotes the presence of a purulent secretion, as well as disease of a mucous membrane; as has been recently noticed by Dr. Babington. I have, however, been acquainted with the fact for many years."

He has seen minute hairs in the urine, when any external source appeared highly improbable, and once he met with them in the pelvis of the kidney after death.

Substances that do or do not pass through the kidney.—It may, perhaps, be useful to mention these—useful we mean, in practice. Some substances pass but little changed. Such, for instance, is the hydriodate of potash, which may be detected in a very short time, in the urine of those who have taken it, by the aid of a solution of starch, and a few drops of nitric acid. Other saline matters said to pass through the urine but little changed, are the borate of soda, the alkaline carbonates, the chlorate of potash, the prussiate of potash, the nitrate of potash, the muriate of barytes, &c. &c. On the contrary, the mineral acids, the preparations of bismuth and lead, the oxide of iron, &c. are said by Berzelius and Wöhler not to pass through the kidneys. Among substances of an organic origin, some pass through the system readily, and appear in the urine, while others are decomposed. Of substances passing more or less readily through the system, may be mentioned, the gallic acid, (as in the *uva ursi*, &c.) also the succinic acid, the carbonic acid? &c. According to some, the citric, malic, and tartaric acids, pass through the kidneys; but this is denied by others, and Dr. Prout thinks with good reason. When combined with alkalies at least, these acids are invariably decomposed in their transit through the system. To the list of substances passing through the system so far as to impart to the urine their peculiar odour, more or less modified, may be added various essential oils and balsams, as turpentine, copaiba, and many others of this class; also the aromatic and colouring principles of coffee, onions, asparagus, &c. With respect to this last class of substances it may be remarked, that the phenomena take place much more readily in dyspeptic, than in healthy individuals. Indeed the odour of almost every thing taken may be detected in the urine of dyspeptic and sedentary persons; and the circumstance may be considered as invariably denoting imperfect assimilation.

Dr. Prout recapitulates in a very useful Table, the details through which he has gone so circumstantially. The table we introduce.

TABLE.

Exhibiting a contrasted view of the relations between the principles of the blood and the principles of the bile and of the urine, formed either mediately or immediately from the blood.

[illegible]

Dr. Prout takes care to observe that the preceding tabular view represents the phenomena as they *generally take place*—the *law* and *not* the *exception*. Of that tabular view he gives a sort of general account which we cannot but look on as important.

"The blood," he says, "contains two different forms of the albuminous principle, one of which, the *albumen*, properly so called, is converted by the secondary assimilating processes into the *gelatinous* (or *saccharine*) and *albuminous tissues*; the other, the *fibrin*, into the *muscular tissues*.* The blood also contains an *oleaginous* principle. The other animal matters present in the blood are ill-defined, and considered by Berzelius to consist chiefly of the *débris* of the various tissues formed during the secondary assimilating processes. The albuminous principles of the blood, besides the hydrogen, carbon, oxygen, and azote, of which they essentially consist, contain also incidentally, various mineral matters, of which sulphur, phosphorus, iron, calcium, and magnesium are the chief. The oleaginous matters consist of carbon in large proportion, with hydrogen and oxygen, but no azote. The saline matters in the blood consist chiefly of common salt, with soda in some loose state of combination, either with albumen, or other animal matters.

The *bile* contains very little azote; and no principle distinctly known to be analogous to albumen. The peculiar biliary principles (the colouring matter, the biliary resin, and the cholesterine,) contain a large proportion of carbon, and consequently resemble the oleaginous principles of the blood, which, therefore, they probably represent in part. The other animal matters existing in the bile appear to be ill-defined, and to resemble in some degree the ill-defined principles found in the blood. The saline matters in the bile contain relatively a larger proportion of soda than those of the blood; which soda seems to exist in union, partly with the biliary principles, and partly with various acids supposed to be formed from them. The biliary principles, if we except cholesterine in certain forms of disease, do not crystallise, but exist in the bile as first secreted, in imperfectly organised forms.

The *urine* in health contains no albuminous matters; but it contains two principles, urea and lithic acid, in both of which azote is found in large proportion. The urea we suppose to be derived from, or to represent the gelatinous, the lithic acid, the albuminous forms of the albuminous principle. There is no oleaginous principle in the urine; but the colouring matter of the urine (mediately, perhaps, through the colouring principle of the bile) seems to be partly related to the oleaginous principles of the blood on the one hand, and to its colouring matter on the other: neither, if we except the lactic acid, does any form of the saccharine principle exist in healthy urine. The saline matters of the urine differ remarkably from those of the blood and bile. The sulphur and phosphorus which existed in the albuminous principle of the blood are converted in the urine into sulphuric and phosphoric acids. So also, the calcium and magnesium found in the same principles, exist in the urine, as lime and magnesia. The urine also contains ammonia, (derived from the decomposition of urea,) which is entirely wanting in the blood. Hence the number of oxidised and acidified principles found in the urine, as compared with those found in the blood, is remarkable, and places the functions of the kidneys in a very striking point of view." ciii.

Dr. Prout infers that :—

* "There is reason to believe, that the colouring principle of hæmatosine, another modification of the albuminous principle, is intimately related to the colouring principles both of the bile and urine."

First. The liver is the organ by which the blood is depurated of the unassimilated and superfluous oleaginous matters; as well as of those portions of the blood deprived of its azote and vitality during the primary assimilating processes.

Secondly. The kidneys are the organs by which the blood is depurated of the unassimilated, superfluous, and effete albuminous principles, as well as the mineral matters incidental to these principles, or which are otherwise derived.

Thirdly. The neutral and alkaliescent characters of the bile, and the oxygenated and acidulous characters of the urine, show that the general character of the actions going on in the liver and the kidneys are directly opposed to each other—in short, that the general action of the liver is of a negative, the general action of the kidneys of a positive character; and that one of these two important organs thus antagonistically related to each other, cannot be deranged without deranging the other.

Fourthly. The liver and the kidneys (as well as certain minor glandular apparatus) either in virtue of the polar arrangements above mentioned, or of some other (vital) property, must, in a state of health, possess the *function of selecting* from the blood those peculiar principles adapted for their respective operations; and of producing such further changes in them as the animal economy may require. The changes produced by the liver on the principles to be eliminated by that gland, are in some degree of an *organising* kind; that is, the principles separated retain some of their vitality for ulterior purposes; while the changes produced by the kidneys on the principles designed to be removed from the system by these glands, are, in a state of health, without exception, of a *disorganising* kind—that is, everything passed from the kidneys is denuded of its vitality, which is carefully retained as it were in the system. The liver, therefore, may be said to possess an *organising*, the kidneys a *disorganising* function. This deduction is illustrated by what takes place in diseases of the liver and kidneys. Thus, when the liver is diseased, its selecting and organising functions are impaired or lost; and instead of selecting, and further changing into bile those principles, which the welfare of the economy requires should be removed from the blood and employed elsewhere, such principles are retained in the system; or if they do pass through the liver and are separated by that organ, they are imperfectly adapted for their ulterior functions; and thus in both ways great derangements of the health are the consequence. Again, when the kidneys are diseased, their selecting and disorganising functions are impaired or lost; and the deleterious principles in the blood, (e. g. the urea,) are no longer selected in preference for separation from that fluid; while the superfluous or effete albuminous principles, which in the healthy kidney would have been selected and converted into the lithate of ammonia, either remain in the blood, or pass through the kidneys unchanged.

Dr. Prout is confident that these inferences, duly understood and applied, will explain a great many of the phenomena of animal bodies, both in health and in disease.

Of Urinary Calculi.—We may just enumerate their varieties. They are, as our readers must be pretty well aware,—the lithic acid calculus; the lithate of ammonia calculus; the oxalate of lime calculus; the cystic oxide

calculus ; the bone earth, or phosphate of lime calculus ; the triple phosphate of magnesia and ammonia calculus ; the fusible calculus, or the calculus composed of a mixture of the phosphate of lime and of the triple phosphate of magnesia and ammonia ; the alternating calculus (comprising numerous varieties) ; the mixed calculus ; the carbonate of lime calculus ; the xanthic oxide calculus ; the fibrinous calculus ; the prostatal calculus.

The description of these calculi it is unnecessary for us to enter on. The student will be repaid by its examination.

This concludes the "Introduction" to Dr. Prout's volume, and our present notice of it. We have been particular in our account of it ; for, although some, indeed most of the views have been before the public at different times already, they have not hitherto assumed so consistent a form, nor have they been developed into so complete a system. And this we will say, that whoever is unacquainted with them is not on a level with the knowledge of the day.

Periscope;

OR,

CIRCUMSPECTIVE REVIEW.

"Ore trahit quodcunque potest, atque addit acervo."

NOTICE OF "THE INVALIDS' GUIDE TO MADEIRA. By W. W. Cooper."

THERE are few situations more embarrassing to a medical man, than when he feels himself under the necessity of recommending his patients to resort to a distant climate for the restoration of health. For no one would hastily, or without due consideration, incur the responsibility of advising a person exhausted by disease and suffering to encounter the miseries of a sea voyage, and the discomforts necessarily attendant on a residence in a strange land—or, on the other hand, of recommending such an expedient where change of air was not essential to the safety of his patient.

Experience, however, has taught us that change of climate is the most powerful means we possess of arresting the progress of pulmonary, and other fatal maladies; and that where a timely removal is effected, the most beneficial results may, in a great majority of instances, be expected to follow. It becomes then an important part of a medical man's duty to be able to detect the primary symptoms of consumption, and other structural diseases, which are usually insidious in their approach; and, under ordinary circumstances, fatal in their termination. In pulmonary affections we fortunately possess an auxiliary in the stethoscope, by which we can detect organic changes in the chest, generally before the patient is aware of their existence. It is in these incipient stages of disease that the sanatory and restorative influence of change of climate is so particularly available: and if then had recourse to, no doubt the number of victims to consumption and other fatal maladies would be materially diminished.

Madeira has long and deservedly enjoyed a high reputation for the salubrity of its climate and the equality of its temperature: and in those morbid and cachectic conditions of the system to which we have adverted, a temporary residence there may be expected to produce the greatest benefit.

The author of the little work which has called forth these remarks, takes a similar view of the subject, and strongly enforces the necessity, as well as the great utility, of a timely retreat to this island.

"I would have all beware of delay where there is the slightest tendency to consumption. The approach of that disease is so insidious, its first symptoms so slight, that when judging from appearances alone, it may be said that the individual is only *threatened* with it, at that very time may the rudiments of disease not only be established, but even considerable progress made. When the experienced stethoscopist detects the least symptom of a tubercular condition of the lungs, not a moment should be lost. The position of the individual is fraught with danger, but a timely retreat to such a climate as Madeira, may then be confidently looked forward to as a means of checking the impending danger, and cutting short the disease before it is too late."

The work is written in a very pleasing and agreeable style, and contains much useful information respecting the accommodation, expenses, the customs, and

amusements, &c. of the inhabitants; which will be read with great interest by all who visit Madeira either in search of health, business, or pleasure. The medical part of the book is somewhat meagre, and contains but little either of interest or of novelty. But the object of the author has evidently been to furnish (what has long been wanted) a cheap, useful, and entertaining guide to Madeira; rather than to impart information to medical men: in this he has completely succeeded, and we cordially recommend his vade mecum to the notice of our readers.

ON DISEASES OF THE HIP-JOINT; WITH OBSERVATIONS ON AFFECTIONS OF THE JOINTS IN THE PUERPERAL STATE. With Plates. By *W. Coulson*, Surgeon to the Magdalen Hospital, Consulting Surgeon to the City of London Lying-in-Hospital, Fellow of the Royal Medico-Chirurgical Society of London, Corresponding Member of the Medico-Chirurgical Society of Berlin, &c. &c. London, Longman and Co.

In his Advertisement Mr. Coulson informs us that:—"The present edition of this work will be found to differ very materially in form from the first, and to have received considerable additions. The alteration in the arrangement I have adopted in deference to suggestions which appeared to me judicious, and with a view to make the work more readily available in practice. I have treated more fully than in the former edition of the affections with which the diseases of the hip may be confounded; and I have added a chapter (which may be of value for the cases it contains) on the puerperal affections of the joints, to which, according to M. Dugés, the hip is more than any other liable.

In my investigation of the diseases of the hip-joint, I regret that I have not yet been able to classify the inflammatory affections according to the structure primarily affected. During the last sixteen or seventeen years, I have not omitted any opportunity which has occurred to me of examining after death the morbid changes in the part. In all the cases I have examined, where the disease could be said to have been in its earliest stage,—the synovial membrane was inflamed, whilst the cartilages and bone were but very slightly affected at the attachment of the ligamentum teres to the head of the femur. In the other cases, all the structures have been involved in the process of disorganization, and to such an extent as to preclude the possibility of determining to the affection of what structure any particular symptom could be referred. I have been obliged, therefore, to confine myself to a classification which I have thought useful for practical purposes, with a view to the different treatment which the patient may require."

We gave, in a former number, a pretty copious account of the first edition of this work. We shall not go over the same ground again. We shall merely allude to a few of the points introduced for the first time.

1. *Sciatica*.

We have a chapter upon this. We shall take a hint or two.

Three affections, says Mr. Coulson, each distinguished by particular symptoms, have been classified under the term *sciatica*. In the first the pain is confined to the hip-joint, and all the attendant circumstances clearly demonstrate that the complaint is purely rheumatic. The severity of the symptoms varies with the changes of the weather; when the patient begins to use the limb, the pain is intense, but it partially abates as the exertion is continued, and the heat and circulation of the parts affected are increased and stimulated by exercise. There is not unfrequently rheumatism in some other parts of the body; and if

we trace the disease to its origin, we shall find that its exciting cause was such as commonly gives rise to rheumatic affections in general.

With Cotunnus, Mr. Coulson divides sciatica proper into two species, according to the sciatic or crural nerves being the principal seat of the complaint.

The first is characterised by a fixed pain in the hip, chiefly behind the great trochanter, which extends upwards to the os-sacrum, and downwards on the outside of the thigh to the knee. The pain seldom stops at the knee, but often runs on the outer part of the head of the fibula, and descends to the fore part of the leg, where it pursues its course, along the outside of the anterior spine of the tibia, in front of the outer ankle to the dorsum of the foot.

The second species of sciatica, on the other hand, is distinguished by a fixed pain in the groin, which runs along the inside of the thigh and leg, following, in fact, the track of the principal ramifications of the anterior crural nerve, as the other does those of the sciatic.

M. Guerin gives an account of a dissection of inflamed sciatic and scaphenus nerves. The patient died of pneumonia. At the post-mortem examination the right sciatic nerve, from the lower fourth of the thigh, the tibial nerve, to the point where it passes between the gastrocnemii muscles, and the external saphenus nerve, in nearly its whole course, were inflamed.

The inflammation was characterised by a slight redness with serous infiltration, and a moderate degree of tumefaction of the above nerves, particularly of the saphena at its commencement. This nerve was at least double its natural size, of an uniform scarlet colour, and of a hard fleshy texture. In endeavouring to dissect the numerous fibres, both from above and below, towards this spot, they broke, and appeared to be involved in a spongy cord, which was infiltrated with blood, and resistant to the touch; a section of this cord showed nothing but small coagula of blood. In contact with the inflamed saphena nerve, below the gastrocnemii, was a collection of pus, rather effused into the cellular membrane, than enclosed within an abscess, and not penetrating the substance of the nerve.

The filaments of the sciatic and tibial nerves were separated, and as it were dissected, by means of infiltrated serum, to a considerable distance, both above and below the seat of the inflammation.

On the matter of treatment we see nothing to arrest us.

2. *Paralytic Affections of the Lower Extremities.*

A mother, says Mr. Coulson, brings her child to a surgeon with supposed disease of the hip: on inquiry he learns that the patient could not walk at the usual period; but that, when eighteen or twenty months old, or even at an earlier age, he was unable to stand, and that the child was at this time cutting the teeth. On examination of the limb, we find it wasted and apparently longer than the other, the nates of the affected side flat, and the temperature of the whole limb below the natural standard. When the child attempts to walk, it cannot raise the limb from the ground, but draws it along; and when it stands, the weight of the whole body is rested on the sound one, while that of the affected side is half bent.

The diagnostic mark of the disease is the absence of any pain in the joint. If we place the child on a table, and press in the neighbourhood of the articulation, or rotate the head of the femur, no pain is produced; whereas, in the disease of the hip, pain would be experienced.

After the period of dentition, the general health is little affected by this complaint; some years, however, commonly elapse before the child recovers much use of the limb.

The effects of this attack are not merely the partial paralysis of the limb, but sometimes considerable distortion. This for the most part makes its appearance

in the displacement of the foot from its natural position: certain muscles in particular are affected with paralysis; and the consequence is that the stronger set naturally prevailing, drag the foot in their own direction. If the paralysis affect principally the extensor set of muscles, the heel is drawn upwards, and the foot becomes clubbed; if, on the contrary, the flexors be paralysed, then the extensors prevail, and the foot may be either inverted or everted. The deformity in these cases frequently admits of being relieved by the division of the contracted tendons.

The means of treatment in this complaint consist in endeavouring to restore vigour to the motive powers. The atrophied limb should be assiduously rubbed two or three times a-day; and the patient (if sufficiently old) should be made to exercise the muscles in maintaining and varying the vertical position. This sort of graduated exercise will slowly re-establish a certain degree of power of the weakened muscles, and eventually improve the tone of the entire system. In addition, the affected limb may be immersed in hot salt water for ten minutes daily, and active friction afterwards employed.

Great benefit will also be derived from medical treatment regulated according to the constitution of the patient. In some instances, leeches to the head or spine and brisk purgatives may be required, in others, on the contrary, steel wine, quinine and other tonics, and electricity, will be necessary; but in all cases great perseverance must be exercised, both by the patient and medical attendant, as a long time elapses before any material improvement takes place, even under the most favourable circumstances. But though some benefit may be obtained, a perfect restoration of power and flesh to the wasted muscles can hardly ever be obtained.

"A paralytic affection of one or both of the lower extremities not unfrequently follows chorea when it has been of long standing. Cases of this kind are incurable, particularly if the intellect partakes of the general imbecility; but where the mind remains unimpaired, much may be expected from the adoption of judicious treatment. In addition to the treatment pointed out for the relief of sciatic paralysis, counter-irritants of a more powerful nature are to be employed; and they are more beneficial if applied on the tract of the spinal marrow. It may likewise be observed that chalybeate tonics are more indicated in this case than the preceding; and guaiacum is not so often useful. The howels in both kinds of the complaint should be duly attended to; but in the latter very active purgatives are from time to time required.

A form of paralysis frequently accompanies hysteria, and that peculiar affection of the hip which has been deemed to be of a hysterical nature. Sir B. Brodie, in speaking of hysterical paralysis, says, that it has this peculiarity: it is not the muscles, in his opinion, that are incapable of obeying the act of volition, but it is that the function of volition is not exercised. How far this theory is well founded is a subject foreign to my present purpose to enter upon; however, the fact cannot be doubted, confirmed as it is by so many analogous examples; viz. that a great extent of muscular inability usually succeeds the cessation of the pain in the hip in this affection."

3. *Congenital Displacement of the Hip-joint.*

Mr. Coulson gives the following summary of the signs which distinguish this from disease of the hip-joint.

1. In congenital lameness, the thigh is, from the first, shortened; in disease of the hip, on the contrary, in the first stage, no alteration from the natural length is perceptible; and afterwards the diseased limb is considerably lengthened before it becomes shorter. The shortening of the limb, also, which is observable in the last stage, is much more considerable than in congenital dislocation.

2. In this congenital malformation, the shortened limb (if the child be put in

a horizontal position, and the pelvis fixed with the hand) can, by gentle pulling, be lengthened without any pain; and it immediately becomes short as soon as the extension ceases; in disease of the hip, this is not the case; and the shortened limb cannot be extended without the greatest pain.

3. In the congenital dislocation, the nates of the affected side are either in their natural state or somewhat flatter than in the natural state; on the contrary, when the limb is lengthened, the nates are flat; but when the limb is short, they are tense and projecting.

4. In this malformation the shortened limb, with very few exceptions, is not at the same time thinner and wasted, as is invariably the case in disease of the hip.

5. The motion of the hip is, in congenital dislocation, as free as in the healthy state; the child, with the exception of the lameness, being well and free from pain; in disease of the hip, on the contrary, when the limb is once shortened, the motions of the limb are for ever impaired; the patient occasionally suffers from attacks of fever; and the disease, at least at these periods, is connected with paroxysms of pain.

6. In congenital dislocation, the child, when standing or walking, places the whole surface of the sole of the foot on the ground; those labouring under the disease of the hip rest only on the toes of the affected limb.

Mr. Coulson gives a very full account of the puerperal affections of the joints. We shall merely cite his opinion on their nature.

"The contamination of the blood, I must confess, appears to me the most probable explanation of the varied phenomena of these affections; they really seem, as has been recently expressed, to be the result of a poison 'not confined to certain structures, as the peritoneum or uterus, where its violence is pent up and exhausted, but diffused by the circulation over many organs, causing each to re-act after its own laws, and giving to the disease it produces a character of inextricable confusion and almost hopeless fatality.'"

And though, at one time, we were of a different opinion, we now think so too. We consider this a very much improved edition, and can recommend it strongly.

OBSERVATIONS ON THE SURGICAL PRACTICE OF PARIS. Illustrated by Cases. Being a Thesis, to which a Gold Medal was assigned by the Senatus Academicus of the Edinburgh University at the Graduation of 1840. By W. O. Markham, M.D. S. Highley, London. 1840.

AFTER all the intercourse between this country and the Continent, and after all the journalism of the last half-century, we still know very little of our neighbours, as of ourselves, and whatever improves our acquaintance with them is both instructive and amusing. But this we seem to have learnt—that practical utility is not the god of their idolatry, and that in medicine, or surgery, as in the arts of life, we are in *practice*, their superiors. Their merits are very great, but they are not of this description, and while we cannot but admire the ingenuity, the versatility, and frequent originality of the Frenchman, and the profound abstractions of the German, we must not be misled, however some may endeavour to mislead us, into disparagement and disregard of our own sterling attainments.

Dr. Markham observes:—

"The idea of making any comparison between the merits of the surgery of Paris and of England, never entered the writer's thoughts; and, he confesses freely, that a just and comprehensive decision of this question cannot, with propriety, be drawn from such an imperfect sketch as the following. He is led to make this observation, from remarks which he has already heard fall from those who have perused the manuscript. An attempt to decide such a question

cannot but be a task of difficult accomplishment, and one much beyond the writer's powers, and for the obvious reasons, that a lengthened residence in Paris, a discriminating observation, and an impartial and long practised eye, are absolutely necessary for the purpose, qualifications to which he cannot lay claim. Perhaps it might be lawful to doubt if the question ever could be fairly decided by an Englishman. There must be a brighter side in every view; and it is not impossible that the writer may have been, in some instances, only busying himself with the more sombre tints of the picture, or may have made even these darker than true justice demanded, and, at another time, introduced a shadow, where a light should have been found. In plain English, he begs his readers to remember, always, that this is, at best, but a partial view of the matter, written desultorily without any distinct purport, and during the residence of only a few months in Paris."

But let us take a glance at surgery in Paris. We will do our confrères justice, and quote what is for, as what is against them impartially.

Erysipelas prevalent in Paris.

Erysipelas prevails to a great extent in all the hospitals of Paris at all seasons of the year, but at intervals it rages with peculiar severity, attacking every even the slightest wound. The situation of an hospital seems not to afford sufficient cause for its occurrence; for during this winter (1839-40) it appeared in several at the same time, and indeed for many weeks bore the character of an epidemic in the different hospitals; and not only in the hospitals, for it was observed by M. Blandin, that at the same moment, and in an equal manner, it was attacking his private patients, subjects of operation. It is impossible to assign as a cause the great heat which is always maintained in the wards here, and the very faulty ventilation—for these circumstances always equally prevail; whether the season of the year may produce any effect, is not clear, but it was prevailing most particularly last year in the Edinburgh Infirmary, during the same months that it was most violent in Paris during the present year 1840, namely, in February and March.

During these months, in M. Blandin's wards, at the Hôtel Dieu, an attack of erysipelas followed every operation, even the simple puncture of a lancet: and, as no operation was ever delayed through fear of its occurrence, the observation was the more evident.

This will be found to be the case, more or less, in all large towns. Weather, no doubt, exercises a great influence—more occult states of atmosphere probably do so too.

M. Blandin's Crotchets about Erysipelas, and Sangrado Treatment.

"I said before that M. Blandin never delayed any operation in consequence of the greater prevalence than usual of erysipelas in his wards; and this circumstance must be referred, I apprehend, in some degree to the great confidence which this gentleman has in his mode of combating the disease. He considers erysipelas as an inflammation consisting of two elements—inflammation of the lymphatics, and inflammation of the skin; and avers, that the former invariably precedes the latter, and that, when the inflammation of the skin is apparent, the disease has already made much progress. Upon these ideas his treatment is entirely based; and when the constitutional symptoms, as rigors, vomitings, nausea, &c., indicate an attack of erysipelas, M. B. invariably prescribes the application of leeches in great number, in the neighbourhood or course of the lymphatics, *between* the wound, or part affected, and the trunk: thus, in an injury of the foot, leg, or thigh, the leeches are applied to the groin—of the arm, to the axilla—in threatened erysipelas of the head, to the region of the cervical glands—in a wound of the chest, or, after excision of the mamma, to the axillary and cervical glands—in wounds near the anus, to the groin. Of the efficacy and propriety of this treatment, a great many cases, which I wit-

nessed, seemed to bear evidence. But it also appeared to me, that the very high faith which M. B. reposes in it makes him carry it too far, and use it too exclusively: it seemed sometimes difficult to say, if extensive sloughings, gangrene, and even death of the patient, were not as much to be attributed to the continued application of leeches, loss of blood, and consequent enfeebling of his system, as to the intimate nature of the disease itself; and it is not difficult to conceive, how prejudicial must be this treatment in old, worn constitutions, in individuals enfeebled by disease, or whose powers are prostrated by loss of blood, consequent on operations. Another objection to this treatment is, that it often induces the very ill it is meant to combat: thus, in a case of erysipelas of the hand and wrist, arising after extraction of the metacarpal bone of the thumb, I have seen violent inflammation follow the application of leeches, along the course of the absorbents in the arm, and axilla, and this inflammation has spread to the trunk, and produced death,—at the same time every trace of erysipelas disappearing from the hand and wrist.

I could not feel convinced, also, that inflammation of the lymphatics precedes always that of the skin, for I did not see it demonstrated clearly. This treatment M. B. insists upon most particularly; but I cannot say that it was more successful than many other methods employed, as anointing the part, by M. Velpeau, &c."

We, in London, need not say how baseless M. Blandin's theory is—how outrageous his treatment.

Carelessness with respect to Sponges.

Any one who has been accustomed to observe the strictness maintained in most English hospitals, to prevent the possibility of any contagious matter being conveyed from one patient to another, through the means of sponges, &c., would be not a little surprised to find the utter disregard which prevails here (at Paris) as to this circumstance: the same sponge which cleans a bubo or a chancre at one bed is carelessly rinsed, and then employed to dress a stump at the next, and in the same manner makes the circuit of the ward. I could never see that sponge squeezed upon a wound, without thinking of the opening of Pandora's box; and I cannot but feel persuaded that I have seen many inflammations, and their severe consequences, which have had at least a very probable origin in this promiscuous intercourse of the sponge.

How hard it is to operate for Hydrocele.

"Although the operation for the radical cure of hydrocele may be considered as one of the simplest operations in surgery, there is not one perhaps in which more accidents have happened during its performance; and I should imagine from what I have seen and read, that there are very few surgeons in large practice who have not sometimes in their life made some faux-pas in this operation. The cause of these mishaps it has several times appeared to me, might perhaps be sought in the very simplicity of the operation itself, which may induce the operator to be somewhat less careful than ordinary in its performance. A collection of the various accidents which have happened in the hands of different individuals in the performance of this operation would form a curious history.

So frequently have these accidents occurred in the practice of some of the Parisian surgeons, that I have heard M. Ricord state, that he believes a kind of atmosphere surrounds the surgeon; a fatality always attends him during the performance of the operation for hydrocele, and that so impressed was Boyer with the truth of this, that he refused to perform it during the latter times of his practice. The principal accidents which happen during the operation are, pushing the trochar into the testicle, injecting into the cellular tissue of the scrotum instead of into the tunica vaginalis, and injecting into the tunica vaginalis when the abdominal rings are not closed.

I have seen M. Blandin do the first; thrust the trochar into the testicle in a

small hydrocele, and where, by the aid of a light, the testicle could be distinctly seen lying at the back of the scrotum; on withdrawing the trochar, no liquid escaped, and examination, with a light, showed the trochar sticking in the testicle—of course no injection was thrown in—a violent inflammation, however, followed, abscesses formed, and incisions were made into the scrotum to give issue to the matter; the patient, however, after some weeks perfectly recovered. M. Ricord observed that once, in a great hurry, he sent the trochar right through the testicle of a barber; he saw his error, and reflecting for a moment on the frequency with which these mischances on the testicle terminated without bad results, he, after evacuating the fluid, did not hesitate to inject the tunica vaginalis, the trochar still perforating the testicle; and luckily the barber was cured, without a bad symptom. I should think a prudent surgeon would have equally condemned M. Ricord's hurried practice in the first stage of his operation, as his proceeding in the second: he observed that he had often seen the testicle touched, and not a bad consequence of any kind result. Perhaps the most common error is throwing the injection into the cellular tissue, and this error does not seem to be merely the consequence of the canula having slipped out of the tunica vaginalis, for I believe that I have seen the water of a hydrocele drawn off without the canula having entered the tunica vaginalis, which accident might happen either through the maladroitness of the operator, or by reason of the canula not fitting accurately to the trochar. It is not at all difficult to understand how the fluid may escape from the hydrocele, when the trochar has alone entered the distended sac, and the canula never penetrated it, and how almost impossible it is for the injection to find its way into the contracted sac, or into any part but the cellular tissue. It is clear that this mistake may happen without the surgeon having for a moment permitted the slightest movement of the canula in an outward direction, and may be the cause of no little surprise to the operator, who feels convinced that the canula has never quitted the sac—which, in fact, it has never entered. One of the most curious points in the history of this misadventure is, the very different degrees in which the injury is resented. The natural conclusion of the consequence of an irritating injection thrown into the scrotum, is violent inflammation, and its destructive sequelæ; but, most happily, theory is not always verified by practice in this instance. I have seen in England four ounces of port wine and water injected into the scrotum of an old man of sixty years, and not above a dozen drops return through the canula, and yet the man recovered, without a single bad symptom. M. Ricord threw the injection he generally uses (a solution of iodine) into the scrotum of a young man at the Hôpital du Midi: not one drop ever returned, nor could the most minute examination discover where it was lodged: the expectant treatment was adopted, and, to the utter amazement of all, not the slightest bad result ensued. M. Ricord said, that it was not the first time, by many, that he had seen the same mistake, and the same happy consequence; and mentioned the circumstance rather as a good joke, than as a warning to his auditors."

It is painful to use harsh expressions, but we ask any candid English surgeon whether this is right or decent? Surely the recklessness with which mistakes are incurred, and the sang-froid with which their results are spoken of, evince a disregard of human suffering and human life that ought to meet with the severest reprehension. It is bad in every point of view—bad because it evinces callousness of feeling—bad because it generates indifference to consequences—and while it lowers the moral tone of the professional mind, it interferes with the success and consequently with the real objects of medical science. One reflection must be uppermost in the thoughts of all men of judgement and humanity. Is this the school where our youth are to be trained—is this the source whence English practitioners are to be instructed? We are often invited to 'urn to the Continent—to yearn after the rich stores of medical knowledge locked up in foreign tongues—to doff our native modes of thought and practice

and assume the newer ones of strangers. But those who have paid most attention to the continental schools, have lately drawn less flattering pictures, and couched up of our admiring of the flashy, but the flimsy accomplishments they boast of.

Are French Records of Cures to be depended on?

Our author touches lightly but significantly, on this subject, yet the suspicion he gives utterance to does not originate with himself. It is one that has been widely entertained and not unfrequently expressed.

"One cannot suppose, however, that, since accidents of this nature are anything but rare, all terminate thus favourably. Unluckily the annals of medical science contain much oftener the victories than the reverses of its cultivators; for self-love too strongly puts a seal upon the latter; and I do not know if the French medical records are not peculiarly obnoxious to the reproach of this remark; at all events, the analysis of their practice does not always give results consonant with the conclusions they deduce from it."

Injection of Congenital Hydrocele.

"One can hardly imagine, how such an error could be made, as injecting a hydrocele, while the mouth of the sac is unclosed—but yet it does sometimes occur. M. Ricord once injected a quantity of wine into the peritoneum, without a shade of a bad result, and he mentioned, that he remembered M. Richerand having done the same thing. Dupuytren says, that this accident has frequently happened,—in one case, induced peritonitis and death: he does not say whether in his own practice or not. I have seen M. Roux inject, in a healthy subject, wine into a sac communicating with the peritoneum, firm pressure being made by three assistants on the canal, and no accident follow. I should observe, that M. Roux did not discover his error of diagnosis, until he had commenced the operation, and was apprized of it by the great quantity of fluid which passed by the canula; and I know not for what reason he afterwards deemed it a case where the sac continued high up into the abdomen, and not communicating with the peritoneal cavity: that it did communicate, the abundance of fluid which escaped seemed to me an evident proof."

M. Ricord appears to commit a very respectable number of blunders, and those not at all little ones.

Time-keeping Surgery at the Hôtel Dieu.

The injecting of hydroceles, as performed by MM. Roux and Blandin of the Hôtel Dieu, does not seem to me to be at all guided by scientific principles; or rather, the operation, as to its data, is perfectly incomprehensible, and is only to be accounted for by custom, which in Dupuytren's time always commanded, that the injections for the radical cure of a hydrocele should be three in number at intervals of three minutes each. The above gentlemen practise two injections of warm wine. Modifying the above usage, M. Roux also times the interval in every operation between each injection: the age of the patient, his disposition, his sensation of pain (and the difference of *this* in different individuals is most remarkable), are totally disregarded by him, and the operation is conducted on strictly horological principles. One may be permitted to express surprise that such self-evident errors should be every day repeated before so many observers. If the weak French wine is not irritating enough to produce sufficient inflammation when only once injected, one would have thought that the simple conclusion would have been to seek a more irritating injection, in order that one injection might suffice—that the operation might be simplified and expedited—and, above all, that the double danger of throwing the injection into the cellular tissue might be avoided. Surely, the surgeon who had withdrawn one injection safely, should be too happy at the event. The timing of the process can be no less erroneous. In short, it is clear, that the prejudices of the schools are not altogether destroyed in the performance of this operation.

Barbarous Operation for Anchylosis.

We really, though far from squeamish, sicken while we record the following.

A woman, 45 years of age, under M. Blandin's charge at the Hôtel Dieu, had been affected with anchylosis of the knee for ten years, an anchylosis consequent on white swelling. The leg was very much flexed upon the thigh, forming an acute angle with it; motion was almost entirely destroyed; but on rubbing the parts together forcibly, a slight crackling was heard and felt. The back of the condyles, and *not* the lower surface of the femur, rested on the tibia, and the patella was forced on the under surface of the femur, and appeared fixed and united there. All the parts which surrounded, and entered into the composition of the joint, were retracted. Such was the condition of this woman's knee when she presented herself for relief. Her health was good, and she was willing to undergo any suffering, even amputation of the limb, rather than submit to the endurance of this impediment, which rendered her life (always hitherto an active and industrious one) burdensome.

It was evident, that all the simple and ordinary methods employed for the resolution of anchyloses, were futile in respect to this case, both by reason of the long period of the existence of the malady, and its extent. So grave an operation as amputation, M. Blandin thought was inadmissible, though I believe in like cases it has occasionally been performed at the request of the patient.

After some discussion, it was at last determined, at the particular request of the patient, and after many pressing instances from M. Louvrier, that this gentleman should be permitted to practise his operation (which was much the subject of discussion in Paris at the time) on the knee, though still much against M. Blandin's opinion.

The object of M. Louvrier's operation is, by the aid of powerful machinery, to extend the anchylosed joint, disregarding utterly all impediments, and the nature of these impediments. The apparatus employed, it is impossible to describe, as it is of infinite complexity, and requires much time, labour, and dexterity to arrange; but the principle of its action is plain: The thigh is made a fixed point, and extension is applied to the leg by aid of the two mechanical powers, the screw and the lever, sufficient to reduce the limb from its highly flexed, to a perfectly extended position. What is going on in or about the joint, during the operation, it is impossible to observe, as the whole limb is thickly enveloped in coverings of brass, leather, &c. &c. When the apparatus is adjusted, all that is visible is the limb thus covered, placed in a wooden case, and resting in a kind of groove, where it slides as it is extended. The operator places himself at the foot of the apparatus, and turns a small wheel, which acts on the leg through the medium of a very strong catgut cord attached to different parts of the leg; the limb gradually redresses itself, and in about two minutes it is perfectly extended. The pain suffered by the patient seemed excessive, and was prolonged by reason of the apparatus breaking in some part during the first attempt. What the force applied was I do not know, but it must have been very great. On examining the limb, when the apparatus was removed, the patella was found free, and the tibia almost entirely thrown *behind* the femur. Conjecture alone could give information as to what had taken place inside the joint. The skin was not torn near the joint, but it was at the heel. Every precaution, after the operation, was taken to anticipate the violent inflammation which might be expected to arise, by the application of leeches, &c., and by placing the limb in a perfectly immoveable position. By these, and other antiphlogistic means, the violent constitutional symptoms that arose were subdued, and she (the patient) seemed to rally from the low state into which she had fallen. But it was only an appearance of return to health, and she gradually sunk into a desponding state. The pain in the knee was constant, her nights were often sleepless, her appetite not good, pulse quick, and extreme pallor of the face. She thus continued till she left the hospital, about five months afterwards. The limb then was perfectly useless, and always painful, and could

not sustain the slightest pressure of the body; and this woman evidently seemed sinking from some cause, when she demanded her dismissal. It was difficult to give the precise state of the knee, as it was, and had been all along from the time of the operation, enveloped in the starched bandage.

Two other operations of this nature were performed shortly afterwards, on patients of M. Velpeau at La Charité; one died fifteen days after the operation, it was said, of peritonitis; the other, after a rather longer period. At Hôpital Neckar, another case terminated fatally, through gangrene, I believe, of the limb; and M. Roux mentioned a case where he was called in to perform amputation of the thigh, which had been fractured in a young man during M. Louvrier's operation.

Several other cases were mentioned in the journals as occurring in hospital and private practice, and with different success as to their results.

Comment on such ignorance and barbarity is superfluous.

MR. HAWES'S MEDICAL REFORM BILL.

The Bill before us came before the public after the latter portion of our Journal closed. We are under the necessity of introducing it here and displacing, on account of it, some Notices of New Works. The Bill having a present application and interest, this will not, perhaps, be regretted.

A Bill to amend the Laws relating to the Medical Profession in Great Britain and Ireland.

1. *Preamble*.—Whereas it would tend to the advantage of the public to alter and amend the laws touching the medical profession, and to make due provision for the prevention of persons, not being duly qualified, from practising the art of medicine, and to provide that all persons before practising the same shall be duly examined, as to their skill and knowledge, by learned and competent persons, and thereupon be permitted to follow and exercise the art of medicine in any part of the British dominions.

2. *Interpretations*.—Be it therefore enacted, That in this Act the words, "art of medicine" include within their meaning the recommending, prescribing, or ordering, either directly or indirectly, any medicine, remedy, or application, whatsoever, for the relief or cure of any disorder, ailment, or illness of the body or mind, or any part thereof; or performing any surgical operation, minor or capital; or practising midwifery; and the words "medical practitioner" mean a person qualified under this Act to practise the art of medicine; and that the words "chemist and druggist" mean a person who shall sell, deal in, mix, or dispense for sale, any drug or medicine for the cure or relief of any bodily disorder, ailment, or illness, except such person as shall have obtained a certificate to practise the art of medicine; and the word "England" shall include Wales.

3. *The Registrars of Medical Practitioners*.—And be it enacted, That the Secretary of State shall, within three months from the passing of this Act, appoint three persons to be registrars, one for England, to have his office in London; another for Scotland, to have his office in Edinburgh; and the third for Ireland, to have his office in Dublin; and also such clerks as the said secretary shall deem necessary for carrying this Act into execution, until the election of the first councils hereinafter provided; the said Secretary of State may also remove any person so appointed. Before the election of the said councils all expenses for carrying this Act into execution shall be paid by the lords of the Treasury out of any monies received by the said registrars by virtue of this Act.

4. *Persons already qualified to Practise Medicine*.—And be it enacted, That the registrars shall, within thirty days after their appointment, distribute certificates to practise medicine, according to the form annexed, to every person who

shall apply for the same, and who *shall produce his diploma*, certificate, or licence to practise medicine or surgery, dated prior to the passing of this Act, granted by any English, Scotch, or Irish university, college, hall, or other person or corporation legally entitled to grant the same at the time of the passing of this Act, and also to every person who shall apply for the same, and who was actually practising medicine in England prior to August, 1815; but the said registrars shall grant such certificate for that part of the kingdom only for which they shall severally be appointed to act.

I authorise [Thomas Johnstone] of [15, Cavendish-square], to practise the art of medicine in England (or Scotland or Ireland) until February 1st, 1850.

5. *Expense of Certificates and Registers of Practitioners.*—And be it enacted, That every person applying for a certificate to practise the art of medicine shall pay for it to the registrar the sum of [], and be subject to the like payment annually. The certificate shall bear date on the day on which it is granted, and continue in force until Feb. 1st, 1843; and the said registrars shall, at any time during one month preceding the 1st of February in every year, grant such certificates, and also to such other persons as shall be entitled to them, to take effect from the date thereof, and continuing in force until the 1st of February in the year next following that in which they are granted; and each registrar shall register in a book every certificate which he grants, and in February of every year shall print a list of all persons to whom he has granted such certificates prior to the 1st of February for the year ensuing, and of their places of abode; and the persons only whose names are contained in the last printed medical lists shall vote at any election held for the purposes of this Act. Copies of such medical lists shall be furnished to any person for sixpence each copy.

6. *Councils, and who shall elect them.*—And be it enacted, That on the 1st of June, 1842, and once in every three years, the medical practitioners registered and resident in England, shall elect a council for England; those in Scotland shall elect a council for Scotland; and those in Ireland shall elect a council for Ireland; twenty councillors for each council, who, in three whole years, shall go out of office, each councillor being capable of being re-elected.

7. *Who shall recommend the Councillors, and how.*—And be it enacted, That forty days previous to each election any such voter may transmit to the registrar a paper, as annexed, signed by six or more voters, containing the names of any persons he may wish to be elected as councillors, and the registrar shall print all such names together (unless they be members then going out of office) with the names of the persons recommending him, and only persons so nominated shall be eligible to be elected.

8. *Places of Elections.*—The elections shall be held at such places as the respective councils may appoint, within four miles of the General Post-office in London, within two miles of that office in Edinburgh, and within two miles of the same in Dublin; and the registrars shall give public notice of the times and places in the newspapers ten days before the elections. The *first* election shall be held at such places as the registrars shall appoint.

9. *Place, Time, and Mode of Voting.*—The elections shall be held before the registrar, commencing at 9 o'clock, A.M., and closing at 4 o'clock, P.M. of the same day, and every voter may vote for the whole number of councillors to be chosen, by delivering to the registrar or his deputy a voting paper according to the form annexed, in the Schedule, folded or sealed up, so that the contents cannot be seen, containing the names of the persons for whom he votes; or if sent by post, then the said voting paper shall be inclosed in a declaration, according to the form annexed; and the registrars shall transmit to every voter, fourteen days before the election, one voting paper and declaration to be returned, filled up, to the registrar on the day of election, to be opened according to the provisions hereinafter made.

10. *Who shall conduct the Elections.*—After the said election the registrar shall proceed to examine the voting papers to ascertain who are elected, and the twenty

persons who have the greatest number of votes shall be the councillors elected; in case of an equality in the number of votes for any two or more persons, the respective registrars shall publicly draw by lot from among those having an equality of votes, as many names as may be necessary to complete the whole number of councillors to be elected; and the names of the council shall be published in the London, Edinburgh, or Dublin newspapers having the largest circulation, in seven days after such election; and each of the past councils shall, after the year 1842, appoint two or more councillors, to see and certify that the said election has been fairly conducted. At the elections for councils in 1842, the Secretary of State shall appoint two persons to superintend the election.

11. *Existing Medical Colleges and Corporations*.—And be it enacted, that the University of Oxford, in convocation assembled, and the Senates of the Universities of Cambridge and London, and the *Fellows* of the London College of Physicians, and the *Council* of the London College of Surgeons, and the Court of Assistants of the Apothecaries' Society in London, shall, if they think fit, severally appoint one fit person to be a member of the council for England; and the Faculties of Medicine in the Universities of Edinburgh, Glasgow, St. Andrew's, and Aberdeen, and the Councils of the Edinburgh Colleges of Physicians and Surgeons, and of the Glasgow Faculty of Physicians and Surgeons, shall, if they think fit, severally appoint one fit person to be a member of the council for Scotland; and the Provost and Fellows of Trinity College, Dublin, and the Councils of the King's and Queen's College of Physicians in Ireland, and the Dublin College of Surgeons, and the Dublin Court of Apothecaries' Hall, shall, if they think fit, severally appoint one fit person to be a member of the council for Ireland.

12. *Future Registrars*.—Upon any vacancy in the office of registrar the several councils shall appoint another registrar; or, failing so to do, the Secretary of State shall appoint one.

13. *Removal of Registrars—New Registrars—Deputies*.—The council of each kingdom respectively may remove any registrar for neglect, misconduct, or infirmity of body or mind; and in the event of the office being at any time vacant, such vacancy shall be advertised in newspapers of the largest circulation within the kingdom to which he acted, six weeks previous to the day for electing a successor. Candidates shall give notice of their intention to the council fourteen days previous to the election. If any registrar is absent, or incapable for a time, the president of the council shall appoint a good deputy to act for him.

14. *Officers under the Act*.—On the 14th of June in every year each of the councils shall elect, by ballot, a president of their council for one year; and if he die, or cease to hold the office, the council shall, within ten days, elect by ballot another president for the remainder of the year; and shall also appoint a treasurer, not being a member of the council; and also three auditors of the accounts of the council; and also their own clerks and other officers. The councils may remove the treasurer, clerk, officer, or servant so appointed, and appoint other persons to fill those offices when vacant; and shall fix the salaries of the registrar, treasurer, and others so employed; and also such remuneration to the individual members of council for the execution of their duties as they shall deem reasonable.

15. *Meetings and voting of Councils*.—All acts of the councils may be decided upon by the majority present, the meeting consisting of not less than a majority of the whole council. The president, if present, shall have a casting vote. The meeting of any council shall be notified three days beforehand, by summons sent to the abode of each member.

16. This clause provides for the holding of *special meetings*.

17. *Monies of the council*.—All monies, fees, and dues belonging to the council, shall be paid to the treasurer, and carried to the account of a fund to be called "the medical fund" and applied towards the payment of all expenses in-

curred in carrying this act into effect ; and in case " the medical fund " shall be more than sufficient for these purposes, the surplus may be applied from time to time towards the encouragement and advancement of medicine, and of science and literature connected therewith, as the senate hereinafter mentioned, and council conjointly, shall think most desirable.

18. *Payments.*—The treasurer shall pay no money out of the fund, save upon the order of three or more members of the council, countersigned by their registrar, except as hereinafter provided.

19. *Accounts.*—The treasurers' and registrars' accounts shall, in June and December in every year, be properly audited and published, along with the current medical list.

20. *The councils when at Law.*—The councils may sue and be sued in the name of their registrar for the time being, who shall be deemed plaintiff or defendant in every such suit or action : provided also, that the registrar, although appearing as plaintiff or defendant on the record, may, if not otherwise interested or objectionable, be a witness in every such action or suit.

21. *Election of a Medical Senate.*—And be it enacted, That each council shall, within thirty days next after their election in 1842, and in the December of every fifth succeeding year, elect by ballot from amongst themselves, or others, three persons, who shall be called " the Medical Senate of Great Britain and Ireland," and continue in office five years. Vacancies in the senate shall be filled up by the councils for the remainder of the five years. Members of senate shall be capable of being re-elected.

22. *Its Registrar.*—The registrar for England shall be the registrar to the senate.

23. *Meetings of the Senate.*—The senate shall, on the 10th of July in every year, meet in London, at the usual place of meeting of the council for England ; and all reasonable expenses of the members of the senate attending any such meeting, shall be defrayed out of the " medical fund " of the respective councils. (The rest of the clause provides for the holding of special meetings of the senate at the desire of any two of the councils.)

24. *A majority of the whole senate must be present, and assenting to meetings and acts of the senate.*

25. *The President.*—At the annual meeting of the senate, it shall elect by ballot its own president for one whole year. A vacancy to be supplied, in the same way, for any portion of the twelve months.

26. *Privileges of Senators.*—Any member of the senate may be present at any meeting of the councils, and take part in its discussions, but not vote there ; and also be present at any examination held by any examiners appointed under this Act.

27. *Expenses of the Senate.*—All expenses of the senate (excepting the expenses of its members attending the same as hereinbefore provided) shall be divided into three equal portions ; and the senate shall make an order, signed by three of its members and countersigned by their registrar, for the payment of the one such portion upon each of the treasurers of the several councils, who shall pay the sums expressed in such orders out of any monies coming into their hands by virtue of this Act.

28. *By-laws relating to Medical Education and Examinations for Diplomas.*—And be it enacted, That the said senate shall make such by-laws for the United Kingdom, regulating in all respects the education of candidates applying to be examined for a diploma of qualification to practise the art of medicine, or to carry on the trade and business of a chemist and druggist, and also regulating the examinations of persons prior to the granting of the said diploma, as from time to time shall to the said senate seem proper ; and such persons only as shall comply with such by-laws, shall be admitted to such examinations. But no such by-law shall be of force until forty days after a copy thereof shall have been published in the *London Gazette*, and another copy thereof sent to one of

her Majesty's principal Secretaries of State for the time being; and if at any time her Majesty, with the advice of her Majesty's privy council, shall disallow such by-laws, or any part thereof, such by-laws or the part thereof, so disallowed, shall be null and void. If the senate neglect to publish any such by-laws within twelve months, the Secretary of State shall make and publish them: provided also, that any such by-laws shall not be valid unless they require that previous to the examination of any person desirous of obtaining a diploma of qualification to practise the art of medicine, he shall produce a diploma, certificate, or letters testimonial, of having taken a degree in medicine, or of having passed an examination in medicine or surgery before some university, college, hall, or other persons, legally entitled to grant a diploma, certificate, or letters testimonial, at the time of the passing of the Act.

29. *New Pharmacopœia.*—And be it enacted, That the senate shall cause their registrar to publish, under their direction and authority, a book containing a list of medicines and compounds, and the manner of preparing them, together with the true weights and measures by which they are to be prepared and mixed, &c. to be called "The British Pharmacopœia;" and that the senate may alter and amend such Pharmacopœia as often as they shall deem necessary; and every chemist and druggist shall mix, make, and compound, according to the directions therein contained, and according to no other formula, and obey in all respects the orders therein directed.

30. *The only future Medical Practitioners, Chemists, and Druggists.*—And be it enacted, That no male person whatsoever shall, from the 1st of February, 1842, practise medicine for remuneration, directly or indirectly, in any part of the United Kingdom unless he has obtained a certificate to practise the said art according to the provisions of this Act; nor shall any person from the 1st of December, 1842, carrying on the business of a chemist and druggist in any part of the United Kingdom unless he has obtained a licence under this Act.

31. *The present Licencing Bodies.*—And be it enacted, That after the publication of the by-laws for regulating the examinations for diplomas to practise medicine, no corporation nor any university, except under this Act, shall grant any diploma, certificate, or licence to practise medicine, or to carry on the trade of a chemist or druggist in any part of the United Kingdom of Great Britain and Ireland.

32. *Examiners and Successful Candidates.*—And be it enacted, That each of the councils shall appoint annually fit persons to be examiners for granting diplomas in medicine, or licences to carry on the business of a chemist and druggist; and such examiners shall examine as the senate may direct, all candidates who may prove to be duly qualified according to the by-laws of the senate, and report the result of the said examinations to their respective councils, who shall direct their registrar to grant a diploma to practise medicine, or carry on the trade of chemist and druggist according to the forms annexed, to every person whom the council shall deem qualified, upon the payment of [] for such diploma; and every person who shall have obtained such diploma may obtain from one of the registrars a certificate or licence to practise medicine, or trade as a chemist and druggist, and to renew it annually; and no person, except as herein provided, shall receive such a certificate or licence unless he pass such examinations aforesaid.

33. *Navy and Army Surgeons.*—Every person desirous of being appointed medical officer in her Majesty's army or navy shall be eligible for such appointment upon obtaining a diploma of qualification, or a certificate to practise the art of medicine, and, while actually employed on her Majesty's service, shall not be liable to renew it annually.

34. Dentists or cuppers now in practice shall, before the 31st of December, 1842, send a declaration as annexed to that effect, signed by themselves and two substantial householders, to the registrar, and shall obtain a certificate giving them leave to practise still what they practised before.

Declaration of Dentists and Cuppers.

I, *A. B.*, of *C.*, in the county of *D.*, hereby declare that I was practising as a (dentist or cupper) in the county of *D.*, previous to the 1st day of []
(Dated and signed).

35. And be it enacted, That each registrar shall grant a licence to carry on the business of chemist and druggist, according to the form annexed, to every person who has received a diploma of qualification from either of the councils, upon the payment of the sum of [] for such licence, to be renewed annually, on the 30th day of November; and each registrar shall register every licence which he grants as aforesaid, and publish the same in his medical list; and also the registrar shall grant the same to persons already, before the passing of this Act, carrying on the trade of chemist and druggist, or persons being assistants or apprentices, and applying within twelve months to the registrar for the same, and these persons are not to renew it annually unless they desire: provided always, that if any person as aforesaid shall *once* renew his licence as aforesaid, it shall not be lawful for him to carry on the trade and business of chemist and druggist unless he continue to renew it annually.

Licence to carry on the Trade and Business of Chemist and Druggist.

I, *A. B.*, by virtue of the powers vested in me by an Act of Parliament passed in the [] year of the reign of her Majesty Queen Victoria, authorise *C. D.* of [] to carry on the trade and business of a chemist and druggist in that part of the United Kingdom of Great Britain and Ireland called [] until the 31st day of November, 18 []

Dated and signed by the medical registrar.

Licence to carry on the Trade and Business of a Chemist and Druggist.

I, *A. B.* by virtue of the power vested in me by an Act of Parliament, passed in the [] year of the reign of her Majesty Queen Victoria, hereby authorise *C. D.*, of [] to carry on the trade and business of a chemist and druggist, he having signed a declaration that he was engaged in the said business previous to the passing of the said Act.

Dated and signed by the medical registrar.

Declaration of Chemists and Druggists.

To the medical registrar for

I, *A. B.*, of [], hereby declare that I was [] previous to the day of [] 18 [], at []. Dated and signed.

36. *Medical and Chemical Assistants and Apprentices.*—And be it enacted, That every medical practitioner, and every chemist and druggist, having any assistant or apprentice in his employ shall, before the 31st of December in every year, transmit to the registrar the name of such assistant or apprentice, according to the form annexed, together with a declaration in writing, signed by himself, according to the said form; and the registrar is required to register in a book the names of the persons so transmitted to him, and insert them in the medical list published next after the receipt of such declarations; and be it enacted, that no medical practitioner shall, after the 31st day of December, 1842, employ any person as an assistant who does not possess a diploma of qualification, or a certificate to practise the art of medicine; and no chemist and druggist shall employ any person to assist him in the actual vending of drugs and medicines who does not possess a diploma of qualification to carry on the trade and business of a chemist and druggist, or a licence according to the form above, unless such persons so being assistants to any medical practitioner or chemist and druggist shall be apprentices for any period not exceeding seven years, and duly registered: provided always, that any person being an assistant to any medical practitioner, or to any chemist and druggist, shall not be required to take out his annual certificate or licence during the time he shall be so actually employed.

Declaration of Assistants and Apprentices.

To the medical registrar for

I, *A. B.* of [] declare that I have in my employ [Insert christian and

surname; age; whether assistant or apprentice; if apprentice, date of indentures; if assistant, date of diploma]; and I request that you will duly register the same.

(Signed)

N.B.—The person making such declaration must state whether he is a medical practitioner or a chemist and druggist. This declaration must be sent to the registrar before the 31st of November annually.

37. *Power and Privileges of Medical Practitioners.*—And whereas certain powers, benefits, privileges, appointments, acts and things, have, by custom, law, or right, been conferred on, or executed, or performed by physicians, or surgeons, or apothecaries, be it therefore enacted, That from and after the 1st of February, 1842, every power, privilege, appointment, and authority, heretofore held by any physician or surgeon, or apothecary, by any law, charter, or custom, shall be held and enjoyed by persons possessing certificates to practise the art of medicine according to the provisions of this Act, and such persons only.

38. *Money Accounts.*—And whereas disputes and differences have arisen as to the right of medical practitioners to recover at law charges for professional visits and consultations, be it therefore enacted, That any person duly qualified to practise the art of medicine may recover in any court of law by action of promises, or debt, any reasonable sum of money for professional visits and consultations, together with full costs of suit.

39. Medical practitioners, and chemists and druggists, shall be exempt from serving as *jurors* and *other officers*, after the passing of this Act.

40. This clause imposes a penalty of £100 on any registrar or his deputy refusing or neglecting any duty enjoined by this Act.

41. This clause imposes a penalty of twelve months' imprisonment for illegally obtaining diplomas, certificates or licences from any registrar.

42. This clause imposes a penalty of six months' imprisonment for making a false declaration under this Act.

43. This clause imposes a penalty of £20 (each offence) for illegally practising medicine, or carrying on the trade of chemist and druggist.

44. And be it enacted, That every medical practitioner and every chemist and druggist who shall employ any assistant not being duly qualified according to the provisions of this Act, or who shall neglect to make a declaration of any person being an assistant or apprentice in his employ according to the provisions hereinbefore contained; and every person not being duly qualified according to the provisions hereinbefore contained, who shall act as an assistant to any medical practitioner or chemist and druggist, shall pay for every such offence any sum not exceeding ten pounds.

45. This clause states that offences under this Act may be prosecuted before any two of her Majesty's justices of the peace in petty sessions assembled acting in and for the county in which the offence has been committed, &c.

46. And be it enacted, That in every adjudication of a penalty under this Act, and nonpayment thereof, it shall be lawful for the magistrate to commit the offender to any gaol within his jurisdiction, for one calendar month where the sum shall not exceed five pounds, and for three calendar months where the sum shall exceed five pounds, the imprisonment to cease on payment of the sum due, and the costs for the recovery thereof; and the one moiety of every penalty recovered shall be paid to the informer, and the remainder to the treasurer of the medical council for that part of the United Kingdom in which the offence was committed.

47. Any person who may think himself aggrieved by such conviction may appeal to the justices of peace at the next general or quarter sessions of the peace, under such restrictions as are usual or proper in cases of appeal against convictions before magistrates.

48. Business that may happen to fall on a *Sunday* shall be done on the Monday following.

49. And be it enacted, That this Act may be *amended* or *repealed* by any Act to be passed in the present session of Parliament.

Spirit of the Foreign Periodicals.

INTERESTING CASE OF ENDO-PERICARDITIS AFTER RHEUMATISM.

On the last day of April, 1837, M. *Bouillaud* was summoned to visit Dr. R. residing 26 miles from Paris, who, he was informed, after having been for upwards of a fortnight suffering with severe articular rheumatism,* was then labouring under alarming symptoms of thoracic distress, so that his life was almost despaired of. On his arrival, he found his patient seated in an arm-chair, breathing with great difficulty, his face puffy and swollen, and his legs considerably infiltrated. Several medical men were in the room, and all of them were justly alarmed.

I examined, says our author, the respiratory and circulatory organs, and discovered the most characteristic symptoms of an endo-pericarditis (effusion into the pericardium) and of a double pneumonia with effusion into the pleuræ;—the effusion filled almost the entire left side, but only the lower third of the right side: the pulse was from 108 to 120. In spite of the advanced period of the disease, I at once recommended the adoption of vigorous antiphlogistic treatment.

The patient was bled immediately to the extent of sixteen ounces, and a large number of leeches applied to the chest, so as to obtain nearly twelve ounces

* In the letter requiring M. *Bouillaud's* presence, the following abridged account of the case up to that date is given. Dr. R. had on two former occasions suffered from acute gouty rheumatism. The present attack supervened about three weeks ago when he was not yet recovered from the influenza. Almost every joint in the body was affected with pain, and there was considerable fever, especially towards the evening; the pulse was not strong. The treatment consisted in the use of warm diaphoretics and gentle purgatives. Nine days ago, he was first seized with a sharp pain in the left sterno-clavicular region; it was relieved by leeches, but next day it returned with as great severity at the base of the chest on the left side, near the attachments of the diaphragm, and was accompanied with considerable embarrassment in breathing: it was considered a muscular pain. As however no relief was obtained from the application of leeches and afterwards of a blister, twenty ounces of blood were drawn from the arm, and the patient was put in a vapour bath. In spite of these means, the dyspnoea became more distressing; so much so that he was obliged to get out of bed and walk about the room: the pulsations of the heart were at this time extremely tumultuous. The dyspnoea was regarded as purely spasmodic; and, as the exacerbation of fever took place every evening, quinine was administered with the view of arresting the paroxysms. It is stated that, up to the evening of the 22nd April, auscultation afforded no symptom to indicate any alarm: that then for the first time a strong blowing sound was heard over the heart, the movements of which were excessively tumultuous. Next day, the patient was very low and depressed; his breathing was still very difficult, so that he could not lie down. He was cupped over the cardiac region; a blister also was applied there, and a mixture containing digitalis was ordered. The symptoms continued with increased severity up to the day that M. *Bouillaud* was summoned to his assistance. As each evening the dyspnoea became more and more alarming, and gradually abated towards morning, the physicians in attendance allowed themselves to believe that the disease was of an intermittent character, and required the use of quinine again, although it had been tried already without any benefit.

more. Next day, he was again bled from the arm—the blood on both occasions was buffy. During the night the patient was excessively restless and distressed, being every now and then forced to get out of bed in consequence of a feeling of imminent suffocation: occasionally too he was delirious. Towards morning he became easier, and his respiration more free, except when he attempted to move, and then it was always suffocating. The pulsations of the heart were violent but regular; the sound of œgophony was distinctly audible on the left side, but on the right it was no longer perceptible, and resonance was established at every point. The prognosis therefore was that the fluid in the right pleura had been absorbed, and the quantity in the left one diminished. Next morning (2nd May) another bleeding to the extent of eleven ounces was practised, and the blood was again found to be buffy; the pulse was still upwards of a hundred, but the movements of the heart, though violent, were somewhat calmer. 3rd May. The patient was bled for the fourth time, and two blisters were applied on the chest—the œgophony was still distinct on the left side; the evening exacerbation of the febrile symptoms was rather less. On the following day (4th) there was a marked improvement; the pulse had fallen to 92, the hopes of the patient were raised, and he began to desire for food, having hitherto been restricted to “la diète la plus absolue.” Every thing now advanced favourably; the level of the water on the left side gradually descended, and by the 15th, the fluid was nearly all absorbed. Two fresh blisters had been applied; and in addition to the treatment already described the patient had, since the visit of M. Bouillaud, taken calomel in conjunction with digitalis or the extract of opium. Eventually Dr. R—— recovered his health completely; and is now practising his profession at ———. *Traité du Rhumatisme par J. Bouillaud.*

The preceding history is very interesting, and illustrates exceedingly well the danger that is apt to arise from overlooking existent disease of the heart and from attributing to spasm the dyspnoea and other thoracic symptoms, when in truth they arise from inflammation. There is reason to believe that such an error in diagnosis was at first committed in the case of the late *King William IV.*, and that the disease had already advanced to a dangerous extent before antiphlogistic measures were resorted to.—*Rev.*

M. ANDREAL ON ENDOCARDITIS AND CARDITIS—CASE OF ALLEGED GANGRENOUS ENDOCARDITIS.

... ..“ The inflammation of the membrane, which lines the cavities of the heart, presents analogous appearances to those observed on the internal tunic of the blood-vessels when they are inflamed. The morbid changes are of a similar nature, although never existing to the same extent. Thus, the cavities of the heart are too large ever to be nearly obliterated from the effects of endocarditis; but still there is no doubt but that a sudden and very manifest contraction of the cardiac orifices may be induced in this way. The internal surface of the heart exhibits a granulated aspect; and at the points which are the least smooth (*les plus dépolies*) we observe small coagula adhering. If the endocarditis has become chronic and has existed for a length of time, the lining membrane becomes considerably thickened, and covered with large opaque patches, more especially in that portion which corresponds to the valves. These are the only morbid changes which are necessarily induced; but others may be developed, such as cartilaginous concretions, or ossific cretaceous deposits. It is exceedingly rare that purulent matter is secreted on the surface of the inflamed endocardium.

In some cases the entire substance of the heart's parietes becomes affected with inflammation; and, when this occurs, it is not unfrequent to find purulent

matter under the endocardium, or fairly intermixed with the muscular fibres, which are then usually soft and lacerable. Sometimes we observe a genuinely ulcerative carditis; it may terminate in a complete perforation of the heart: when this occurs, the *ramollissement* of its substance is always very great. Such are the immediate consequences of carditis; among the more remote, hypertrophy of the organ is one of the most frequent. In truth, the orifices of the heart become contracted in carditis; to expel the blood, the organ must contract with more than usual force; and you know that it is a law of the organism, that every organ, whose activity is augmented, becomes the seat of a more active nutrition. Such is the usual cause of hypertrophic enlargement. In the same manner we find the walls of the stomach acquire a great thickening, when the pyloric orifice becomes in any way obstructed: the bladder also is liable to the same condition, when there is any impediment to the excretion of the urine."

..... The following case of what the observer, Dr. Gigon of Angoulême, calls gangrenous endocarditis, is reported in a recent number of the *Esperience*.

A man, 56 years of age, was attacked with symptoms of thoracic distress after exposure to wet and cold. He was bled twice from the arm, and various remedies were used. The dyspnoea, however, gradually increased, and at length Dr. G. was summoned to his assistance, during the sixth week of his illness; his case having been considered at one time as of asthma, and at another of hydrothorax, or of hepatisation of the lungs. When Dr. G. saw him, he was sitting upright, panting for breath, and every now and then crying out for fresh air, for he felt as if he was about to be strangled.

On examining the chest, the cardiac region was observed to be distinctly more prominent than the chest on the opposite side; the impulsion of the heart was scarcely perceptible; a distinct (beau) blowing and somewhat rasping noise was heard at both sounds; but it was loudest during the first sound towards the apex of the heart, and during the second one towards the edge of the sternum.

The auscultation of the breathing did not afford any thing remarkable; there was a slight mucous *râle* behind on the right side. The pulse was somewhat irregular, but did not exceed above 80 beats in the minute; it was soft, but not filiform. The diagnosis, which was formed, was *contraction of the right and left orifices of the heart, the probable result of overlooked acute endocarditis*. Dr. G. presumed that there was a contracted state of the cardiac orifices, from the distinct blowing and sawing noise heard during the sounds of the heart, and from the extreme difficulty of breathing that was present; and judged that this had been induced by preceding endocarditis, from all the details of the case. The attack was recent and acute—of about six weeks' duration at most. The patient had never suffered from rheumatism, nor experienced any distress about the region of the heart; and certainly a chronic organic lesion, capable of producing such alarming symptoms as were present, could not have allowed the patient to have undergone the fatiguing and laborious exertions to which he had been accustomed, before his attack of illness. He died three days after Dr. Gigot's visit.

Dissection.—In the right pleura there was a considerable effusion of reddish serosity; the lung on this side was pushed upwards and backwards towards the vertebral column. The left lung was adherent over a considerable extent; but its tissue, as well as that of the right one, was every where crepitant, although, when cut across, a quantity of water flowed out.

Immediately underneath their pleural surface there were numerous livid spots, very similar to those observed on the skin in purpura.

The pericardium was sound; and there was scarcely any fluid within its bag. The heart itself was large, and much distended with soft non-adherent coagula.

When freed from all its coagula, it weighed 13 ounces. The endocardium of the right cavities did not exhibit any appearance of redness or change any where; but the edges of the tricuspid valve were thickened and of a reddish colour at several points.

Around the orifice of the pulmonary artery the ventricle was coated with a tolerably firm layer of lymph; and this extended back among the *calumnæ carneæ*, and seemed to be continued from a coagulum, which existed in the auriculo-ventricular orifice. On the left side of the heart, the following morbid appearances were observed: the mitral valve was exceedingly strong and thickened: its edge was of a deep scarlet hue; but nothing indicated any imperfection of its mechanism. The chief lesion was in the aortic valves: two of them were indurated, and adhered together by their adjacent angles; they were thus immoveable, and projected considerably into the tube of the aorta. The endocardium at the bases of these valves was red and thickened; but towards their free edges, it was soft, friable, of an ashey-grey colour, and decidedly ulcerated. One of them was perforated at its centre by an opening, of a line in diameter. Every thing in the aspect of these two aortic valves indicated a gangrenous disorganization. There were no traces of ulceration on the third valve; it was only very red, and slightly thickened. These three valves exhibited, therefore, traces of distinct inflammation in three different stages;—1, redness with thickening; 2, gangrenous ulceration; and lastly, gangrene with perforation. The internal membrane of the aorta was reddened for a considerable extent beyond the valves; it was also soft, and could be easily separated with the nails.

Dr. *Gigot* appends the following remarks to the preceding details. "No doubt can exist, in our opinion, as to the date and the nature of the disease in the present case; for, six weeks before his death, the patient was quite well, and could engage in laborious occupation without any inconvenience. He had never suffered with any symptoms of pulmonary or of cardiac disease. All of a sudden, after exposure to cold and wet while perspiring freely, he was seized with sharp fever and difficulty of breathing: the treatment was inefficient, and he died.

Dissection revealed the following appearances: redness, swelling, softening, ulceration, gangrene, false membranes of the endocardium. With such symptoms as we have alluded to, and with these post-mortem appearances before us, we cannot refuse to admit the existence of acute and violent inflammation."

M. ANDRAL ON THE CHANGES OF THE BLOOD IN DISEASE.

MM. *Andral* and *Ganneret* have for some years past directed their attention to the study of the blood, more especially in reference to the relative quantities of its fibrine, its colouring particles, and its serum, in a great variety of diseases; and the results of their enquiries were recently submitted to the Royal Academy. They are founded on the examination of 360 bleedings, drawn from 200 patients.

We may state, as one of the general results of their enquiries, that they have found the proportion of the fibrine, in 1,000 parts of blood, to vary from one to ten, that of the globules from 185 to 21, that of the solid matters of the serum or the albumen from 104 to 57, and that of the water from 915 to 725.

In a state of disease, it is not common to find that these different constituents of the blood increase or diminish in quantity simultaneously. Most frequently one only of them is decidedly affected; but occasionally two of them are altered in their relative proportions at the same time; and then this is usually

in an inverse or opposite ratio. For example, when the quantity of the fibrine is increased, that of the globules is generally found to be diminished; and vice versa.

Before stating the results of MM. *Andral* and *Gannet*'s experiments, we shall briefly describe the composition of the blood in a healthy state, so that our readers may be enabled to compare the changes which occur in disease with the normal standard.

The *solid part*, the clot or coagulum, of the blood is composed of 1, the fibrine, which forms a large mesh-work holding in its interstices the other elements which enter into the composition of the clot; these are—2, the blood-globules—and 3, a great quantity of serosity, similar to that in which the clot floats, but which is retained in the meshes of the fibrine, as water is in the tissue of a sponge. The *fluid part*, or the serum, is water holding in solution—1, albumen—and 2, saline ingredients, the chief of which are the muriates of potash and soda, the carbonate of soda, the sulphate of potash, and the alkaline phosphates. It is to be observed that, in the coagulation of the blood, the separation between its solid and its fluid constituents is far from being complete. The coagulum retains a large quantity of serosity,—amounting to at least three-fourths of its weight. It is therefore a most serious error to suppose that the proportion of the coagulum to the serum of the blood can be ascertained by a simple inspection of their respective quantities. To estimate the proportion of the fibrine, one of the best plans is to well beat or whisk the blood, while recently drawn, with a rod: if this be continued sufficiently long, all the fibrine will become attached to the rod, free from the red globules, and from the other constituents of the blood, which remain behind. The globules are entirely distinct from the fibrine: the first may be altered, while the second remains unaffected; and vice versa.

The globules are formed of albumen united to hæmatosine; there is another quantity of albumen held in solution by the serum. Whatever opinion we hold as to the nature of these two sorts of albumen, we cannot refuse to admit that one forms an integral part of the blood globules, and that it is quite distinct from the fibrine. The well-known experiment of *Müller* is decisive on this point. On filtering the blood of a frog, the globules are left on the filter, and we then procure a colourless fluid, from which there is gradually deposited a coagulum of pure fibrine. The old opinion therefore, that the globules of the blood consist of fibrine and colouring matter, is now universally acknowledged to be erroneous. Before we proceed to give a summary of the researches of MM. *Andral* and *Gannet* on the various changes, in the relative quantities of the different leading constituents, of the blood in different diseases, we must have a standard of comparison to represent the condition of the blood in a state of health. The following may be assumed as sufficiently correct.

In 1000 parts,

There are 3 of fibrine	} the dry Coagulum.
2 of hæmatosine	
125 of solid albumen in the globules.	
68 of liquid or dissolved albumen	} the Serum.
12 of saline matters	
790 of water.	

As it is in one or more of these elements that the manifold changes, which occur in the blood during different diseases, are manifested, it is most important to determine accurately the constitution of healthy blood. The errors which have been committed on this subject, even in recently published works, have

been very egregious. For example, the proportion of fibrine has been stated to be as high as 10, 14, and even 24 in the 1,000 parts; and that of the serosity sometimes as low as 600!

But it is unnecessary to dwell further upon this subject; and we shall therefore now proceed to state, as summarily as we can, the results of MM. *Andral* and *Gannet's* observations on the changes which the different constituents of the blood undergo in different classes of diseases. These may be arranged as follow:

1. Those in which the quantity of the fibrine is constantly increased, as the *phlegmasiæ* and in tubercular *phthisis*.

2. Those in which the fibrine is in a normal or in a diminished quantity, while that of the globules is either normal or increased, as the *pyrexia*, and many *hæmorrhages* and *congestions*.

3. Those in which the quantity of the globules is always diminished, as *chlorosis*, &c. &c.

4. Those in which there is a diminution in the quantity of the albumen in the serum, as in *albuminuria* or the *morbis Brightii*.

It is not to be supposed that in many diseases the alteration of the blood is confined to one only of its constituents: several may be affected at the same time.

For example, if a chlorotic patient is seized with any inflammatory disease, the blood will be found still to contain a diminished quantity of the red globules, but then that of the fibrine will be now increased. "We have so repeatedly," say the authors, "witnessed these results, that, whenever the quantity of the fibrine is found to exceed five parts, we should not hesitate at once, and without further knowledge of the case, to assert that the patient is labouring under an inflammatory disease; and, on the contrary, whenever there is less than two parts of fibrine, we should, with equal confidence, deny the existence of such a complication."

Besides actual disease, the privation of nutritious food and any loss of blood will much influence the proportions of the constituents of this fluid: these causes act chiefly by diminishing the quantity of the red globules. But it is to be observed, that in different cases the influence of these agents is very different. There are in this respect great individual differences and a great inequality of resistance: so much so that while in one patient, from one bloodletting to another, the globules will not lose above two or three, in another patient the loss will amount to thirty or forty in a thousand parts. While the proportion of the red globules is always more or less affected by previous bloodletting, that of the fibrine is usually little, if at all, affected by it; it is very rarely diminished, and in some cases even seems to increase. It is only when the detraction of blood has been considerable, and when the proportion of the globules has commenced to undergo themselves a marked diminution, that we observe that the proportion of the fibrine, and indeed of the other solid constituents of the blood, becomes very sensibly impaired.

First Class.—MM. *Andral* and *Gannet* have examined the blood in 82 cases of *Phlegmasiæ*—articular rheumatism, pneumonia, bronchitis, pleuritis, peritonitis, tonsillitis, erysipelas, cystitis, acute suppuration of the lymphatic glands, and furuncular eruption with fever—and in 152 bleedings practised in these diseases. In all these cases, where the disease existed in an acute form and was accompanied with fever, the blood drawn exhibited a notable increase in the proportion of its fibrine. If we take the number three as indicating the normal proportion in the thousand parts of this constituent in a state of health, in rheumatism, and in pneumonia, it was observed to oscillate between four and ten, the medium being seven and eight. In bronchitis the medium was between six and seven; in pleuritis and in peritonitis between five and six; and in

the other diseases enumerated it was somewhat lower. In no case, however, did the proportion fall below four, and very rarely below five. It is to be remembered that in every instance the disease was strictly acute, and more over was attended with distinct febrile excitement. If the disease was originally, or if it had become of a chronic character, and if fever was never present, or if it had ceased, the proportion of the fibrine may no longer be found to be in excess.

Whenever a phlegmasia abates, the proportion of the fibrine in the blood diminishes; and if, after it has abated, it becomes again aggravated, the quantity of the fibrine is found again to increase. If an acute inflammation occurs in the course of another disease, its existence may immediately be detected by an increase in the proportion of the fibrine.

Very different is the case with the red globules; for it would seem that they never become increased in quantity in any inflammatory disease; often, indeed, they appear to be diminished. In all cases, however, when the inflammation subsides, the quantity of the globules is certainly diminished; but this effect is most probably owing to the loss of blood and the low diet which have been practised. A great diminution in the proportion of the globules does not seem to prevent the development of inflammatory action; and, on the other hand, a surcharge of them in the blood does not seem to predispose to or favour it.

The observations of MM. *Andral* and *Gannet* shew that the development of inflammation is compatible with very different conditions of the blood in reference to the proportion of its red globules; this being sometimes as low as 48, and at other times as high as 60.

In all inflammatory diseases, the quantity of the solid constituents of the serum, or the albumen, did not exhibit any notable alteration. The proportion of the water varied from 771 to 840.

So much for the state of the blood in the phlegmasiæ. There is another disease in which our authors have invariably detected an unusual quantity of fibrine in the blood—viz. *tubercular phthisis*. *Whatever be the period of the disease, there is always observed a tendency to an increase of the fibrine and a diminution of the globules of the blood*; but neither the one nor the other change are at all equally marked in all its stages or phases.

As long as the tubercles are crude, the increase of the fibrine is inconsiderable, not exceeding four—the proportion in healthy blood being denoted by three; and the diminution in the proportion of the globules, although manifest, is not yet decided. But no sooner do the tubercles begin to soften, than the increase of the one constituent, and the diminution of the other, become much more apparent. At length when the lungs are hollowed with vomicæ, the proportion of the fibrine will be found to have risen to five, five and a half, or even six. If, however, the marasmus is very great, the quantity of this as well as of the other constituents obeys the law of decrease, and falls even below the normal standard. In general, the blood of phthisical patients contains the largest amount of fibrine, whenever they begin to be affected with a continued febrile movement.

While these changes are going on in the fibrine, the red globules are equally changed, but in quite an opposite manner: the proportion of these becoming less and less as the disease advances. During its first stage, the proportion of this element is at or above 100; in the second stage, it falls somewhat below this number; and in the third stage, it falls still lower, but it was never observed below 81. The solid constituents of the serum in phthisis were found to vary from 61 to 98; while the quantity of its watery portion varied from 784 to 845.

Class Second.—Diseases in which the fibrine of the blood is in a normal or diminished quantity, while that of the red globules is either normal or increased. This class embraces two orders—*pyrexia* or *fevers*, and several *congestions* and *hemorrhages*. During the precursory stage of fevers, we never observe any

increase, and rarely any diminution, in the fibrine; while, on the contrary, we never observe a diminution,—provided no blood has already been drawn—but often an increase in the proportion of the red globules.

Simple Continued Fevers.—Provided no distinct inflammatory action is going on in any part, the blood is usually found in the condition now described. In one case of well marked *angeiotenic* pyrexia, the proportion of the globules had risen as high as 185, while that of the fibrine was at the normal standard.

Typhoid Fevers.—In consequence of the inflammatory appearance of the intestinal lesions, which form the anatomical feature of these fevers, we might expect to find the blood exhibiting the characters which it presents in the phlegmasiæ; but such is not the case, whatever be the intensity of the intestinal inflammation. At no period of typhus is the blood ever found to contain a larger amount of fibrine than it does in health; but, on the contrary, the proportion is often decidedly less. The more serious the fever, the more decided is usually the diminution of this constituent. As to the proportion of the red globules, whereas this is but little affected at least before the employment of bloodletting, &c., it seems almost always in fevers somewhat higher than in health, more especially in the early stages of the disease. Thus even on the eighth day of a fever, it is not unfrequent to find the quantity of the globules as high as 140 or 150, whereas in pneumonia and acute rheumatism it seldom or never exceeds 130. Even after the employment of blood-letting and the use of a low diet in cases of fever, the proportion of the globules is seldom or never found so low as 130. How different from what we observe in the genuine phlegmasiæ! However,—and this circumstance is very remarkable—the high proportion of the globules either may never have existed or it may have ceased to exist, and yet typhoid fever may be developed and may proceed in its course.

Eruptive Fevers, as small-pox, scarlatina and measles. In these fevers, the fibrine of the blood has been found as low as one, and has never exceeded four; and this maximum was observed in one case only. It is indeed surprising that in a disease like small-pox, in which the skin is the seat of a profuse suppuration, the blood should never exhibit the signs which characterise this fluid in the genuine phlegmasiæ. We must therefore regard the cutaneous inflammation in variola, as well as the intestinal inflammation in typhus, as only one element of a more general disease which overpowers them, and from which the blood receives its peculiar characters. With respect to the globules in the eruptive fevers. We may state that we have found their proportion increased in several cases of rubeola and scarlatina, but not in a single instance of variola.

Intermittent Fevers.—In all the cases in which the blood,—whether it was drawn during a paroxysm, or during an intermission—has been examined, our authors have obtained only negative results.

Congestions and Cerebral Hæmorrhagies.—In the majority of cases, but not in all, the proportion of the fibrine has been found below the normal standard, while that of the globules was either equal to or exceeded it: these characters were most distinct at the beginning of the invasion.

Class Third.—Diseases in which the quantity of the globules of the blood is invariably diminished. The most remarkable of these are chlorosis, various dropsies, the cachexia from the influence of lead, or from protracted agues, profuse hæmorrhages: in some cases of chlorosis the proportion of the red globules has fallen from 127 (the normal standard) as low as 38; more usually it

does not descend lower than 50. In one case of extreme etiolation from profuse hæmorrhage, the proportion of the globules did not exceed 21. The proportion of the fibrine is never affected to the same degree as that of the globules in the diseases above enumerated. MM. *Andral* and *Gannet* had repeated opportunities of observing the gradual increase in the quantity of the red globules in chlorotic patients, during the administration of steel medicines; in one case the rise was from 46 to 95.

Class Fourth.—Diseases in which the solid constituent, or the albumen, of the serum is diminished. MM. *Andral* and *Gannet* have in several instances of albuminuria found that the proportion of the albumen in the serum of the blood had fallen from 72, the normal standard, down to 60 and 56. The other constituents of the blood have in these cases exhibited no steady or uniform deviations; those, which have been observed, seem to have been chiefly attributable to some accidental circumstance, such as the occurrence of inflammation somewhere, or of excessive weakness and emaciation.—*Gazette Medicale*.

It must be quite unnecessary to direct the *special* attention of every reader to the preceding most valuable communication. M. *Magendie* has already announced that he has been for some time past engaged in a similar series of experiments with those, which have now been communicated to the Academy by MM. *Andral* and *Gannet*. The subject is one of exceeding interest, and of the greatest practical moment. We have of late years repeatedly expressed our conviction that it is chiefly by an accurate observation of the changes of the blood and of the secretions that we are to look for any important advancement in our knowledge of the nature of diseases, and of the most successful method of treating them. It might be hasty to draw any practical conclusions from the researches of which we have given a brief account: they require to be confirmed by other observers, before we are warranted in doing this. We may however direct our readers' particular attention to the very curious circumstance of the blood in phthisis exhibiting the same character, at least in reference to the increased quantity of its fibrine, as it is well known to do in the phlegmasiæ; and also to the very striking difference between the state of the blood in the phlegmasiæ and that of this fluid in the genuine pyrexia or fevers.—*Rev.*

M. ROSTAN ON THE PATHOLOGY OF TYPHUS FEVER.

The following brief extracts from one of M. *Rostan's* recent clinical lectures will shew his opinion on the *gastro-enterite* doctrine of typhus.

..... "Is the affection of the Peyerian glands an inevitable occurrence in typhus, and is its existence essential to characterise the disease? We must admit that in an immense majority of cases, these glands are really affected in various degrees; but it is incontestable that the disease may exist without any appreciable post-mortem alteration in them. I should also mention that the Peyerian glands are not found to be altered in those diseases which have the closest analogy with typhus, such as phlebitis, and the absorption of purulent matter into the system. In the ataxic fever of Pinel all the characters of typhus are observed; but not its anatomical lesions. Far be it from us to call in question the existence of typhus; we only wish to shew that various causes may give rise to morbid poisonings, whose phenomena are similar to those of typhus, without their being attended with any alteration of the intestinal glands, such as is usually met with in it."

..... "The blood exhibits specific characters which are of the greatest interest. Those pathologists, who see nothing in typhus but a serious inflam-

mation of the intestine, pretend that the blood retains at first all its normal properties, and undergoes alteration only in consequence and as a result of the disease, and then becomes diffuent. Now it is quite true that, at the commencement of the disease, the blood exhibits all its normal physical characters, and seems to retain all its physiological characters. In this respect it resembles the blood of persons who have been submitted to the action of the cow-pox virus. In them it apparently preserves all its properties; we cannot indeed detect any change or modification in it; and yet this cannot be strictly true, seeing that this blood has now acquired the property of resisting the influence of small-pox:—some change or modification therefore must surely have taken place in it. There is moreover something analogous in these two affections, cow-pox and typhus, and indeed in all other morbid states of the system which arise from the operation of any poisonous or septic agent. Thus the specific effects of the vaccine virus are not felt, during the first three or four days after its insertion, on the mass of the blood, which does not yet possess the properties necessary to resist the variolous contagion,—even although the vaccination may have already caused a febrile re-action. In the same manner in typhus, the blood retains, in the early days of the disease, its normal appearances, although most certainly it is already modified or altered by the influence of the typhoid poison introduced into the blood. These considerations lead us to believe that the alteration or modification of the blood, induced by the introduction of a poisonous agent, is gradual and progressive, and not simultaneous and immediate—the rapidity, with which this takes place, being probably owing to the greater or less virulence of the toxic or poisonous agent. I am of opinion, continues M. Rostan, that the fluidity or diffidence and the violet colour of the blood observed in typhus is not the result of the disease; but, on the contrary, that they are the immediate effect of the specific cause of the fever. Moreover experience demonstrates to us that the blood never undergoes these peculiar changes in any genuine inflammatory disease;—which should surely be the case if the modifications, which it exhibits in the course of typhus, were really the result of an open (*franche*) or prolonged inflammation, as many medical men of the present day believe.”—*Gazette des Hôpitaux*.

• *Remarks*.—We are glad to find that M. Rostan, whose name deservedly stands high among the physicians in the French metropolis, abjures the Broussaian dogma that typhus fever is in truth a *gastro-enterite*. We do not deny that the intestinal mucous glands are not unfrequently found, in this disease, more or less altered on dissection; but to regard such an alteration as the essential and initiative morbid element, is just as reasonable as to view the enlarged cervical glands the *cause* of the scrofulous diathesis. It is truly astonishing how long, and to what extent, so many of the French physicians have allowed themselves to be the dupes of a doctrine which *à priori* appears so improbable, and which, in spite of the zeal with which some of its advocates still support it, is gradually becoming more and more obsolete. We are pleased to observe that M. Rostan, while he exposes the fallacy of his countrymen in this respect, is impressed with the importance of studying the alterations of the blood in typhus fever. Every year we are returning more and more decidedly to the Boerhaavian hypothesis, that fever is the effect of some morbid poison introduced from without or generated within the system itself, and that its phenomena are just the evidences of numerous changes which the poisoned state of the blood induces in the numerous organs of the body. It is true that this doctrine in former times gave rise to many fanciful and most incorrect notions, which, as they were the offspring of mere conjecture and not of correct observation, can never gain our assent; but it is equally true that the humoral pathology of numerous diseases, and unquestionably of fevers among the number, gives a far more rational explanation of their phenomena than the modern doctrine of localisation, as the

French call it. That the exanthematous or eruptive fevers are the effect of the introduction of a poison into the system will not be disputed by any one. Then, why should not the same be the case in the case of typhoid fever, which has so close an affinity, nay, we may rather say, so perfect an identity, with them? The more that we consider the subject, the more reason we shall find to adopt a humoral pathogeny of typhus fever.

In a recent number of *Ammon's Monatschrift für Medicin, &c.*, there is a paper by Dr. *Cramer* of Cassel, who maintains similar views. He says: "ordinary typhus is the result of an infection, or poisoning of the blood;" and in reference to the affection of the intestinal mucous glands, he says, "we must regard, as a peculiar product of the dyscrasia of the blood, the typhoid tubercle which is formed in these glands and excites ulceration in them. This ulceration is therefore one of the effects, and certainly not the cause, of the disease; it may be wanting, and yet the fever may nevertheless follow its usual course."

In another German journal, the *Medicinisches Correspondenz-Blatt*, for the same month, there is a paper on abdominal typhus by Dr. *Sieckner* of Heilbrunn. He considers it as "a disease of the blood," which attacks only secondarily the nervous and other systems of the body. In short, in every country, there seems to be a manifest tendency among medical writers to the establishment of a modern humoral pathology.—(Rev.)

M. ROSTAN ON THE TREATMENT OF TYPHUS.

M. *Rostan* very judiciously reprobates the adoption of any exclusive system of treatment in typhus. Alluding to the practice of *testing*, so to speak, the relative value of different modes of treatment by comparing their results in equal numbers of cases, he says,—

"Some physicians of late have taken, for example, a hundred patients, whom they have divided into five series, of 20 each, and then they have treated each series upon a particular plan, such as the antiphlogistic, the purgative, the tonic, or the expectant; and, from the comparative number of cures in each series, they have attempted to determine the relative value of these different modes of practice. Now what has been the result of this arithmetical mode of procedure? Why, that each mode of treatment has been nearly equally unsuccessful! But such a method of drawing conclusions is dangerous in the extreme; for each individual case of the disease requires an individual mode of treatment, and each form a peculiar management. Now each series having been taken at hazard, without any attention to the form of the disease, does it not follow as a necessary consequence, that a mode of treatment, which may have been suited for one form, was most probably any thing but appropriate to another form? It is thus evident that if those patients, who were affected with the inflammatory form, were treated with stimulants and tonics, they must almost necessarily have been injured; and on the other hand, if those, in whom the adynamic form was present, were treated antiphlogistically, an equally unsuccessful result must have followed."

M. *Rostan*, after these preliminary remarks, makes some brief comments on the different lines of practice which have been adopted in the treatment of typhus; and first on—

The Antiphlogistic or Depletory Method.

Some physicians have pretended that by bleeding largely, and according to a particular formula, they have often succeeded in strangling the disease. From a considerable experience I am convinced that large and repeated bloodletting is the most certain method of inducing a most dangerous adynamic prostration

and of accelerating the death of the patients. Where such a practice has succeeded, we may be certain that the case was not one of typhus fever, but rather of some genuine inflammation. I know, says M. *Rostan*, that to reason in this manner is to make a *petitio principii*; but my conviction is so strong upon this point that I am forced to admit such a principle. In all diseases which are produced by the action of some specific cause, bloodletting is insufficient to arrest the progress of the mischief; not so with respect to genuine inflammation. It is by reasoning in this manner that I can understand how those physicians, who do not recognize any *specificité* in typhus fever, and who regard it only as one form of gastro-intestinal inflammation, have succeeded in curing typhoid affections by bloodletting; for in truth the cases were examples of genuine inflammation, and not of fever. In fine, I am convinced that depletions of blood cannot be safely employed in the treatment of typhus, but with the greatest caution. In this respect I agree with MM. *Chomel* and *Louis* that, when the disease presents itself under an inflammatory form, we may have recourse to antiphlogistic remedies with moderation, but that we should never exceed one or two small bleedings.

The Expectant Method.

M. *Rostan* mentions that, when the Academy of Medicine was recently occupied with the question as to the best mode of treating typhus fever, some of the Academicians submitted the results which they had obtained in their practice by "la methode expectante," or in other words by doing little or nothing, and thus leaving the case almost entirely to the curative efforts of Nature; and that it appeared that these gentlemen could boast of as many cures as their confreres who had been bleeding and purging their patients in the most vigorous style.

M. *Rostan*, however, is too sensible a man to allow his mind to be influenced by the reasonings of either party. The cures effected by the expectant method must have been in cases of but trifling severity, and where the febrile action had a tendency to run its course with moderation; but to suppose that either the strictly inflammatory, or the strictly adynamic form, of typhus is not under the influence of remedial measures, and should therefore be left to itself, is at once both most foolish and pernicious. It is, however, quite true that almost every case of fever, whether it be of a phlogistic or of an adynamic character, at one stage of its progress, requires an *expectant medication*, when all active treatment either of a depletory or of a tonic nature should be suspended. This is at the moment when the fever, having already received the application of the therapeutic agents which its type may require, has a natural tendency to progress in a favourable manner. Such a mode of *expectation* is, however, very different from the "fare niente" practice of some physicians. The practice in the one case is like that of a general who first strikes a decisive blow upon the foe, and leaves him to capitulate; that in the other, of one who expects that he will surrender without any effort made to compel him.

The Revulsive Method, Cutaneous Irritants.

M. *Rostan* at once proclaims his dissent from the opinion of M. *Louis*, that the use of vesicatories is hurtful;—he has repeatedly had occasion to observe that, after the action of a blister, the pulse has very considerably abated in frequency, and the other symptoms become diminished in severity. "I am convinced," adds our author, "that at a certain period of typhus, when the loss of blood cannot be safely continued, and when it would be unsafe to act on the system of *expectation*, we may have recourse to cutaneous revulsives with great propriety. It is true that they succeed less frequently than abstractions of blood; but we should remember that the proper period for their use coming after that for bleeding, and when this remedy has not sufficiently arrested the

course of the disease that it may be safely left to itself, the conditions in which they (blisters) are employed are more unfavourable.

The Purgative Method.

..... "Observing the little success that attended the practice of most physicians in typhus, M. Larroque came to the resolution of employing purgatives in all cases of the disease. Viewing the disease not as a simple inflammation, but as the result of a general poisoning or infection of the whole system, he imagined that the best plan of treatment must be to endeavour to destroy and evacuate the poison by promoting free evacuations from the bowels; and we must confess, that, by following out this idea, he has met with very considerable success in practice."

Is it not strange that an educated physician, like M. Rostan, should attribute to M. Larroque the introduction of the free employment of purgatives in typhus? The French writers seem to be utterly ignorant of what has been done in any other country save that of 'la belle France.'

The following sentence embodies the results of M. Rostan's experience of the purgative method. "In the first thirteen well-marked cases of typhus, in all of whom petechiæ had appeared on the surface, and in several of whom there were eschars on the sacrum, the employment of active purgation was attended with perfect success. Subsequently, however, we have not been so fortunate; and in truth, we have of late actually lost more patients by following M. Larroque's method than by any other plan of treatment." He proceeds to state that physicians differ much as to the most proper period of the fever at which purgatives should be employed; some recommending them at the beginning, and others at the close of the disease. (!) For his part, he adds, he has recourse to them, whenever there is the indication to purge, whatever may be the period of the disease at the time. (!)

The Tonic Method.

The employment of tonics for the cure of typhus has been most bitterly condemned by most physicians. In truth, they have been very unsuccessful; but then this arises from medical men seldom having recourse to them except in desperate cases; the tonic treatment is the *therapeutic extreme unction*, by means of which it has been expected to raise up patients from the profound adynamic state into which they have fallen. At the disastrous epoch of the retreat of our armies, the Salpetriere hospital was temporarily devoted to the military service. Pinel and Landré-Beauvais were at the head of the service, which I (M. Rostan) superintended for them at this period. During the space of six months, 18,000 patients affected with typhus were received into the wards; of this number, we lost only 1,100. All these patients were both physically and morally strong; most of them belonged to the old guards, picked men, who for many years had been accustomed to victory, but they had been exposed to privations, and to defeats besides; and they were now beaten by men whom they had always seen fly before them, and their *morale* was profoundly affected. Who would have dreamed of treating such men with bleeding and other depletory measures? We put almost every one of them on a generous treatment, and administered wine, camphor, musk, &c.

You will perhaps object that these cases were examples, not of genuine typhoid affection, but of nosocomial typhus, and what is suited to the one is not the proper treatment for the other disease. Do not deceive yourselves upon this point; it is all the same disease; the essence of both is the same; they only differ in degree."—*Gazette des Hôpitaux*.

PATHOLOGY OF INTERMITTENT FEVERS.

In a work published last year in Paris, and which has been very favourably noticed in some of the French journals, "*Traité des Fievres ou Irritations Cerebro-spinales intermittentes*," by Dr. Maillot, lately one of the physicians of the French army in Algiers and now professor of medicine at Metz, the doctrine that the primary seat of the morbid action in agues is in the nervous centres is maintained with great ability, both by reasoning on the symptoms of the disease, and by the more sure test of necroscopical examination. Several dissections are reported, and the lesions of the cerebro-spinal axis are described with great accuracy. Other writers, before M. Maillot, have adopted somewhat similar views; and some have gone so far as to define an intermittent fever to be a periodic cerebro-spinal irritation; but to him is due the merit of having illustrated this position by post-mortem researches.

That an intimate connexion exists between intermittent fevers and various forms of neuralgia is sufficiently obvious from the genuinely periodic character of numerous cases of the latter disease. It is scarcely necessary to add, that the same remedy, bark, which is a specific for the one, affords as infallible relief in the other. The analogy therefore between ague and neuralgia affords much curious matter for speculation; and when we call to mind that so many of the worst cases of the latter disease are unquestionably connected with some affection of the nervous centres, at a distance therefore from the seat of the actual pain, we are to a certain degree led to suspect that a similar lesion may possibly give rise to that singular series of phenomena which constitute a paroxysm of intermittent fever.*

ON THE ORIGIN OF CANCER IN THE VEINS.

Dr. *Langenbeck*, of Gottingen, informs us that he has been led by numerous microscopical examinations of diseased tissues to the belief that the seat of cancer exists very frequently in the venous system. He is however not ready to assent to M. *Cruveilhier's* opinion, that cancer is in every case developed primarily and essentially in the veins. In two cases of cancer of the uterus, followed by cancerous formations in the lungs, he found within the pulmonary veins carcinomatous matter—recognizable with the microscope by its peculiar cellular form—either free, or adhering to the parietes of the vessels. The molecules of the cancerous matter, carried along in the venous stream, may be arrested at any point, and there become developed, and acquire an increase, just in the same manner as any other organic molecule which, under a cellular form, is augmented in volume—as proved by the observations of *Müller*, *Schwann*, and other physiologists on cellular productions (*êtres*) of the vegetable as well as of the animal kingdom.

The cancerous elements may find their way into the circulating fluid in three different ways;—either they may be engendered in the blood itself, and, being carried along with it, are at length stopped at some point where they become developed; or a cancer may be formed in some of the solid tissues, and a portion of the fluid with which it is impregnated becomes absorbed by its veins or lym-

* We may refer the reader for some excellent remarks on the analogy between intermittent fever and neuralgia, to Dr. *Billing's* admirable First Lines—a work in which there is more original thought than in any other we have met with for the last twenty years.—*Rev.*

phatics, and is thus conveyed into the circulation, giving rise ultimately to the formation of new cancerous growths; or, lastly, cancers already ulcerated may corrode the veins or lymphatics of the part, and thus the cancerous cellules (which are each of them germs of new cancers,) may be introduced into the current of the circulation.

The author admits that he has not been able to demonstrate experimentally in any case the primary formation of cancerous cellules in the blood; but, judging from numerous microscopical examinations of the blood in persons already affected with cancer, he thinks that such development is highly probable.

As to the second and third modes of explanation, it is to be remembered that the internal surface of veins, which arise from any organ affected with cancer, is very generally found corrugated, and more or less morbidly altered; thus the disease is apt to be developed in the veins of the liver, if the primary evil has its seat in the extremities of the vena portæ; and in the veins of the lungs, when it is *en rapport* with the two venæ cavæ.

In two cases of cancer of the uterus, the author has seen, within the veins of the pelvis, the cancerous matter of *Crèveilhier* under the form of minute grains or cellules of coagulated fibre of about double the size of pus-globules. In the blood in the iliac veins also, as well as in the inferior cava and the right cavities of the heart, there were observed here and there, by means of the microscope, cellules inclosing nuclei of a yellowish colour, and numerous granules like those which were found in the pelvic veins; in the capillaries of the lungs too the carcinomatous granules were very abundant and were more adherent to the walls of the vessels than elsewhere; and in the pulmonary parenchyma itself new cancerous foci were discovered. In reference to these facts, the author makes the curious remark, that "the cancerous germs or cellules transported to another organ are there developed into a voluminous cancer, just as the germ or ovule of the ovarium, when conveyed into the uterus, becomes developed into the *fœtus*." In short, he looks upon the cellules of cancer as veritable organised beings, which only require to be fixed in a suitable place to develop and multiply themselves; and he therefore so far agrees with those writers who have designated cancers "parasitical tissues."—*Schmidt's Jahrbucher*.

ON THE SEAT OF GONORRHOEA IN WOMEN.

M. Gibert, in a memoir recently read before the Academy, thus expresses his opinion.

..... "In women, as in men, the seat of election of blenorragia is the *meatus urinarius*; but in all the cases, where we have been able to use the speculum, we have observed, at the same time, a uterine discharge co-existing with the urethral flux, and usually remaining for a length of time after this (the latter) has ceased; so that, in my opinion, we must regard the cervix uteri as the principal source of the blenorragia in women.

Several modern writers, deceived by a superficial observation, have most improperly designated the disease by the term of vaginitis. Now in a large majority of cases of gonorrhœa, the vagina remains unaffected (*étranger*), and if it occasionally is found to be reddened and inflamed, this is only temporary, and speedily subsides by rest and cleanliness. It is only in rare and exceptional cases that we observe a milky or puriform discharge proceeding from the mucous membrane of the vagina. On the contrary, in every woman, who has contracted gonorrhœa, there exists during the first two or three weeks a characteristic flow of pus from the urethra; and subsequently a discharge comes from the cavity of the cervix uteri, and this usually lasts for a length of time after the urethral

discharge has ceased, and ultimately cannot be distinguished from ordinary leucorrhœa or fluor albus."

" Out of 216 cases of gonorrhœal flux in the wards of our hospital of Louraine, a great many of which were of several weeks' standing at the time of their admission, we have been able most distinctly to make out the presence of urethritis in 88, and the presence of any affection of the vagina in 40 cases only; and, no doubt, the number of the former would have been much larger if the examination had taken place at an earlier period of the disease; while in reference to the latter number it is to be observed that in many of the cases the redness of the vaginal mucous membranes very quickly disappeared."

M. BEAU'S NEW THEORY OF THE SOUNDS OF RESPIRATION.

"The object of the present communication is to support with new facts the theory which I proposed in 1834, (*Archives Generales*) as to the cause of the respiratory sounds, and to show the various applications of which it is susceptible, by passing in review all the normal and abnormal sounds produced in the larynx, the bronchi, and the lungs. This theory rested on the following two propositions.

1. There is produced in the superior respiratory passages a sound or murmur which resounds in the pulmonary vesicles, the trachea, the bronchi, the caverna, and which, in consequence of this resonance, is the only cause of the different sounds, known under the names of the *vesicular*, the *tracheal*, the *bronchial*, the *cavernous*.

2. Every sound produced in the superior respiratory passages must resound in the bronchial tree with its proper character and its own degree of intensity.

These two propositions were deduced from clinical observations and from several experiments, of which the following are the chief:—

1. When the superior sound is suspended,—and this may easily be done by instinctively dilating the superior respiratory passages,—the vesicular, tracheal, bronchial and cavernous sounds can no longer be heard. The breathing, although now very tranquil and silent, goes on as usual; but if we did not feel under the ear the thoracic parietes alternately rise and fall, we might suppose that the person did not breathe.

2. If we suspend the superior sound during one only of the respiratory movements, then the vesicular, tracheal, bronchial and cavernous sounds are found to be suspended during that movement, while it is still audible during the other.

3. If we produce a whistling sound either during respiration or expiration, the same kind of sound is heard in the bronchial tree.

Dr. *Spittal* has in part adopted these views, and has published the results of several experiments which he has made. He concludes:—"It is therefore reasonable to admit that the sound of the superior respiratory passages exerts, and must exert, a certain influence on the sounds of respiration, known under the names of vesicular, bronchial, cavernous, amphoric. But the preceding experiment is not of a nature to demonstrate that the superior sound is the only source of the different sounds which have been enumerated, although we are strongly inclined to think so."*—*Edin. Med. & Surg. Journal*, Jan. 1839.

* The first idea of this theory belongs to M. *Chomel*, who, in 1827, used the following words in treating of the blowing sound which accompanies pleuritic effusions:—"Laennec is of opinion that the sound of bronchial respiration is owing to the inspired air being stopped in the bronchi, which are compressed and flattened by the effusion into the pleura. But then how should this sound

It has been objected by MM. *Raciborski* and *Stokes* of Dublin, that the superior respiratory sound is often suspended, and yet the vesicular murmur is still audible. It is quite true that such *seems* to be sometimes the case; but in truth it is not, and the mistake arises from want of due precision in making the experiment. The superior sound, although scarcely perceptible, is not completely suspended; and the remnant of it, so to speak, however feeble, is still made resonant in the pulmonary vesicles. To avoid all chances of deception, it is necessary to perform the experiment in a very quiet room; and moreover another person should auscult the larynx, to ascertain whether the superior sound continues or not, while the experimenter is listening to the pulmonary cells, as supposed by *Laennec* and most writers, but of the resonance of the superior sound transmitted along to them. This view is confirmed by the following experiment: adapt a pig's bladder, moistened, to the end of a tube whose diameter is the same as that of the trachea, and then put the other end of the tube into the mouth, and after closing the nostrils breathe only into the tube and bladder: the bladder is observed to be alternately distended and relaxed. The person can, at will and alternately, suspend or exaggerate the superior sound. If the thorax be ausculted at this time, we find that the pulmonary sounds are alternately null or exaggerated, and yet, in these successively different conditions, the bladder does not exhibit any difference in the extent or rapidity of its movements of distention and relaxation. The inference therefore is fair that the air is sent as quickly, and in as large a quantity, into the pulmonary vesicles when the vesicular resonance is audible, as when it is not.

The question to be now considered is, where is the origin or seat of the superior respiratory sound, which, when re-echoed in different parts of the bronchial tree, gives rise to all the sounds emitted by the organs of breathing, alike in health and disease? The orifices or contractions of the respiratory passages capable of causing vibrations in the air which traverses them, and of producing the superior sound, are five—the lips, the nostrils, the isthmus of the pharynx, the glottis, and the upper opening of the larynx.

1. *The Lips*.—If we open the lips so that the interval between them represents an area of 14 or 15 centimetres, there is produced a sensible sound on inspiration and expiration. The sound increases, if the interval is straightened; and it is no longer audible, when it exceeds 15 centimetres.

2. *The Nostrils*.—They are susceptible of only a slight contractility. When they are dilated as much as possible, and the lips are closed at the same time, there is scarcely any sound heard during breathing. If, on the other hand, they are contracted, so that the total area of the two orifices is below 14 centimetres, we perceive a sound, the intensity of which is proportionate to the degree of the contraction. With respect to the posterior openings of the nostrils, as they are immoveable, and moreover considerably larger than the exterior openings, the air must traverse them without occasioning any sound.

3. *Isthmus of the Pharynx*.—This orifice, of a considerable extent, may be

be heard during expiration? Is it not more probable that it is produced in the larynx and the back of the mouth, and that it is transmitted to the ear in the same manner as the voice, which is produced and articulated in the same organs?"—*Dict. de Medecine*.

contracted by lowering the velum palati, and by elevating the tongue. It requires, however, a certain practice to contract it so that the passage of the air through it gives rise to a sound.

4. *Orifice of the Glottis*.—This opening is essentially moveable; its area, when the inferior vocal chords are separated from each other, is about 15 centimetres. This area may be progressively diminished until it becomes completely closed; and it may be so much dilated that it equals that of the larynx. When the area of the glottis is normal, a distinct sound is produced by the air traversing it; its intensity increasing or diminishing, according as this is contracted or dilated.

5. *Opening of the Larynx*.—The area of this orifice is about 40 centimetres. If the lips, the pharynx, and the glottis, be dilated as much as possible, and the respiratory rhythm be normal (16 inspirations in the minute), then no sound will be produced in the upper respiratory passages. But if we quicken the breathing beyond 45 inspirations in the minute, there is produced a sound, whose greatest intensity is audible at the upper part of the neck, and which can be produced only at the opening of the larynx. The lips, pharynx, and glottis being dilated as much as they can be, the opening of the larynx, which is immoveable, becomes the most contracted point of the respiratory passages: and this orifice which, in consequence of the extent of its surface, gives out no sound when the air traverses it slowly, produces a distinct one whenever there is any disproportion between the volume of the air admitted and the area of the laryngeal aperture—such as takes place whenever the breathing is much quickened.

From what we have now said, it would seem that as it is the *glottis* alone, which continually presents an obstacle to the transmission of the air, causing it to enter into vibrations, it must be to it that we must refer the origin or seat of the upper respiratory sound. Let us remark also that the seat of this sound, being the nearest possible to the lungs, is thereby well fitted to produce a resonance of it along the bronchial tree; whereas other sounds, and chiefly the nasal and labial ones which are the outermost of all, reach the interior of the chest with difficulty. It is this *glottic* sound, therefore, reverberated in the air-tubes and pulmonary vesicles, that gives rise to all the various sounds of respiration described by auscultators. It is a double sound, at one moment *inspiratory*, at another *expiratory*. To study these properly, we must not be satisfied with listening at a distance; we should auscult the larynx itself. The relative duration of the two *glottic* sounds is determined by the duration of the corresponding respiratory movements of the chest.

And therefore, as the act of inspiration occupies in health nearly double the time of that of expiration, it follows that the *duration* of the inspiratory glottic sound is about twice as long as that of the expiratory sound. Again, the *intensity* of the former is notably less than that of the latter: a circumstance which confirms the truth of the statement by *Le Gallois*, that the glottis is more contracted during expiration than during inspiration. (These remarks, be it remembered, apply chiefly to the adult.)

The two *glottic* sounds are audible at a considerable distance. By means of auscultation, we may perceive them on the back of the neck, and even on the top of the head; but it is in the trachea and in the lungs that their resonance presents the most interesting phenomena. This resonance is nearly as great in the trachea as it is in the larynx; but it becomes less and less distinct as we recede from the glottis and approach the lungs; and in these it not only diminishes from the upper to the lower part of the chest, but its character is very sensibly altered. It is no longer a blowing sound, but rather a diffused murmur, caused by the vibration of the air in the innumerable minute divisions of the bronchi, and in the pulmonary cellules.

M. Bess, after alluding to the well-known circumstance that the resonance of the expiratory sound in the lungs is not only shorter, but also much less distinct and of a less marked vesicular character than that of the inspiratory sound—although the former is louder in the larynx than the latter—explains the cause of this difference in the following sentence:—

“This very marked difference of intensity between the resonance of the inspiratory and that of the expiratory glottic sounds, cannot be well explained by M. Lemaec’s theory, according to which the vesicular murmurs are supposed to be directly produced by the friction of the air along the bronchial mucous membrane. For, it may be asked, why should the air, on leaving the pulmonary vesicles, not cause as much friction, as on entering them? In truth, the friction must surely be greater, seeing that the act of expiration is performed more quickly than that of inspiration; and if so, then the vesicular murmur ought to be stronger—which however is contrary to fact.”

The Voice.—The voice is the distinct sound produced by the expired air passing through the contracted glottis, and reverberating outwards. But while its chief resonance is outwards, it also penetrates, at the same time, backwards, and resounds along the whole extent of the bronchial tree, in a direction contrary to the current of the air.

It is this inward resonance of the voice that at present we have to consider. When we auscult the voice over the larynx and trachea, we hear each syllable distinct and well articulated, but over the chest the resonance much less clear; there, it is rather a confused and prolonged murmur. The reason of this difference is owing to the trachea being superficial, with nothing to intervene, whereas the bronchi are deep-seated and surrounded more or less completely with the soft parenchymatous tissue of the lungs; and hence, as the air is quitting the vesicles at the moment that the vocal resonance takes place, it must follow that the sound thus produced will be more or less confused and deadened.

This is so true that, when the voice is produced during inspiration—which may be easily done after a little practice—the vesicular resonance of the voice is found to be much more complete and more distinct than it is during expiration.

From these observations it must be apparent that there is a much greater analogy between the voice and the ordinary sounds of respiration than has been usually supposed: both are produced in the glottis, and both result from the vibration of the air passing through the vocal chords.

They are both also, to a certain extent, under the influence of the will, and are therefore susceptible of increase and diminution; but the voice is by much the loudest in its resonance, because not only is the aperture of the glottis more contracted, but the volume of the air is expelled with more force during utterance, than during ordinary respiration.

We shall now follow out this analogy, by tracing the effect of different diseases on those two kinds of *glottic* sounds.

With respect to the voice, it is well known that, whenever the pulmonary parenchyma becomes impermeable to the air, either from hepatisation, or from tubercles, or from pleuritic effusion, &c. the vocal resonance becomes louder and tubular—this is called *bronchophony*.

A still louder and more distinct resonance is heard when the voice is reverberated in a cavity—this is *pectoriloquy*. These sounds are only two different degrees of a circumscribed and tubular resonance of the voice, and they are chiefly dependent on the diameter of the normal or the abnormal cavities which produce them. That genuine pectoriloquy will sometimes proceed from a simple bronchus, especially if it be dilated and surrounded with hepatised tissue, when there is no excavation in the lungs, is confirmed by daily observation. On the

other hand, a cavity may exist in the lungs, and yet there may be no distinct pectoriloquy, but only a bronchophonic resonance.

With respect to the other abnormal resonance of the voice, *œgophony*, we must confess that it is not easy to explain it. This sound is most frequently perceived when there is an effusion into the cavity of the pleura. Occasionally, however, it is heard when the trachea or one of the large bronchi is compressed by a tumor, such as an aneurism of the aorta, &c.

The œgophonic resonance of the voice is also heard in some cases of bronchocele.

We proceed now to consider—

The Glottic Sounds in an Abnormal Condition.—They may be increased, diminished, or perverted.

Increased Sounds.—Whatever causes an unusual disproportion between the aperture of the glottis and the volume of the respired air, has the effect of increasing the force of the glottic sound.

This disproportion exists—1, when the air traverses the glottis very rapidly—and 2, when the glottis is more than usually contracted. The *first* of these two conditions accounts for the greater intensity of this sound in children, and in some women, also after exercise, and in diseases which affect the breathing, such as pneumonia, pleurisy, consumption, &c.; and the *second* explains the occurrence of the same phenomenon in cases of spasm of the glottis, which is so frequent in hysterical patients.

We have already seen that, when the breathing is quickened beyond forty inspirations in the minute, there is produced an abnormal sound at the superior orifice of the larynx. This sound is added, in this circumstance, to the ordinary glottic sound; but the former is the weaker of the two, in consequence of the upper opening of the larynx being less contracted than that of the glottis itself. In certain cases, however, when the laryngeal opening is much contracted, as in œdema of the aryteno-epiglottideal ligaments, it becomes very loud. Other pathological states may induce an abnormal contraction in certain points of the larynx or trachea, and give rise to sounds, whose character is similar to that of the glottic sound.

In this way, sub-mucous abscesses, or swelling of the laryngeal cartilages, or the presence of tumors in the neck, &c. may be accompanied with such sounds in particular parts of the windpipe. These different sounds, altogether abnormal in point of situation, may have the usual character of the normal glottic sound; or they may be associated with other sounds, which then more or less completely disguise it.

Diminished Sounds.—The glottic sounds are diminished in intensity, or even almost extinguished, in circumstances the very opposite to those mentioned in the preceding sentence, viz.—1, when the respiration is very slow, and the air passes through the glottis very gently, as during syncope; and, 2, in certain varieties of hysteric dyspnoea, where the glottis is unnaturally dilated.

Perverted Sounds.—It often happens that the sounds, produced either at the glottis, or at some abnormally contracted part or accidental opening of the larynx or trachea, lose their usual blowing character, and acquire a certain snoring or whistling tone:—we shall allude to these varieties by and bye.

If we examine the relative *intensity* and *duration* of the two—the inspiratory and the expiratory—glottic sounds in disease, we shall find that the latter one continues, as it is in health, always stronger than the former. There is scarcely an exception to this remark, except in cases of œdema of the glottis, where the inspiratory is always much louder than the expiratory sound. As to the relative

duration of the two, we meet with the following differences:—1. The inspiratory sound is, as in health, longer than the expiratory one; but it may be so in a very abnormal ratio, such as we observe in certain spasmodic states of the glottis, and in œdema of the aryteno-epiglottideal folds; 2, in other cases, the expiratory is much longer than the inspiratory one, as in common asthma; and 3, the two sounds are sometimes of equal duration, as in all cases where the respiration is quickened, in pneumonia, the fits of ague, &c.

"From what has now been stated," says M. Beau, "it follows that, whenever the glottic sound is very feeble, or altogether extinguished, its resonance must in like manner be the same. We are not, like *Laennec*, to conclude from this, that in such circumstances the air is received very feebly, or not at all, into the lungs, but only that it reaches them without producing any sound at the glottis. When, on the contrary, the glottic sounds are exaggerated, the resonance will be so likewise—the result of the passage of the air through the glottis being more difficult, and therefore more noisy, than in health."

He objects to the common explanation given of the occurrence of the *puerile* respiratory sound during pneumonia in those parts of the lungs not affected with the inflammation. "To admit," says he, "that a larger quantity of air than usual enters the sound parts of the lungs, we should be prepared to shew that in such circumstances the respiratory movements, the extent of which must be regarded as the strict measure of the quantity of inspired air, are of unusual amplitude. Now, in truth, we do not observe anything extraordinary in these movements on the healthy side of the chest; and on the inflamed side they are almost suspended, paralysed, so to speak, by the acute pleuro-pneumonic pain. And yet, even on the affected side, where the respiratory movements are so obscure, there are frequently considerable portions of the lung which are not inflamed, and which nevertheless give out a puerile murmur, the intensity of which is quite as great as that heard on the healthy side."

M. Beau accounts for the occurrence of the puerile respiration in pneumonia by the greater intensity of the *glottic* sounds, in consequence of the more rapid passage of the air through the glottis. The breathing becomes more frequent, to compensate for the loss of function in the inflamed parts of the lungs: it is only in this sense that we can justly say that the healthy parts make up for the deficiency occasioned by the impermeability of the inflamed portion. The same cause—the frequency of the respiration—which produces the puerile murmur in young children, gives rise to it not only in pneumonic patients, but also after exercise, in phthisis, during the paroxysm of agues, in many fevers, in spasm of the glottis, and in various diseases and in accidental openings of the larynx and trachea, &c. In all these cases, it is dependent upon the greater force of the resonance in the pulmonary vesicles of the exaggerated laryngeal or glottic sounds.

This is the proper place to allude to an important mistake which we find in the great work of *Laennec*. It is there stated that, "whatever be the efforts of inspiration made, a healthy adult cannot give his respiration that degree of intensity which it had in infancy." Now so far is this from being the case, that we do not hesitate to assert the very contrary, and that in all inspirations, short or long, a healthy adult may give to his pulmonary sounds a puerile intensity. All that is necessary for this purpose is only to increase the force of his inspiratory glottic sound—which it is most easy to do. It will perhaps be objected to this statement that *Laennec* has most distinctly denied this, for in one part he says:—

..... "At other times patients, imagining that we are asking of them something extraordinary, endeavour to dilate the chest with all their power, or rather they make several deep inspirations, without expiring in the interval, and in such cases we scarcely hear any sound at all." This remark of *Laennec* is quite true; some patients, when told to breathe deeply, make several strong,

almost convulsive, inspirations. But if we attend minutely, we shall find that these exaggerated inspirations are accompanied with a dilatation of the glottis, which has the effect of at once silencing the *glottic* sound, and therefore its resonance or reverberation in the vesicles of the lungs is no longer audible. *Laennec* himself seems to have felt the difficulty of explaining the fact in question; for he admits, a few lines subsequently, "that the pulmonary sounds imply the existence of an action proper to the lung itself, and which is not necessarily connected with a deep inspiration."..... The theory of *Laennec* on the production of the respiratory murmur, which leaves, as we have seen, several facts quite unexplained, is not more fortunate in accounting for the *puerile* sounds. To reconcile them with this theory, we have been called upon to admit the gratuitous hypothesis, that there is a greater penetration of the inspired air into the vesicles of a healthy, than of an inflamed, portion of lung. But how shall we account for the well known circumstance of the vesicular sounds being so much exaggerated in certain cases of contraction of the larynx or trachea, and also in cases of accidental opening in these tubes? The explanation of *Laennec* here quite fails. On the contrary the *theory of resonance*, which we have proposed, indicates very satisfactorily the mechanism of all exaggerated pulmonary sounds, by showing that they are the result of whatever increases the force of the laryngeal or upper respiratory sound. It is therefore with no little surprize that I have observed, says *M. Beau*, that *Dr. Stokes* of Dublin, in his recent work on the diseases of the chest, objects to my theory on the ground that it does not give any explanation of the *puerile* sounds. I cannot understand the ground on which this author makes his objection.—*Archives Generales*.

Remark.—As the memoir of *M. Beau* seems to us one of the most valuable that we have met with for a long time in the French periodicals, (the contents of which are usually so unimportant) we have been induced to give a very extended abstract of it. A continuation of it is promised by the ingenious author.—(*Rev.*)

DISPARAGEMENT OF AUSCULTATION, BY M. LUGOL. ORIGIN OF TUBERCLES.

M. Lugol, during the course of last summer, delivered a series of lectures on scrofulous diseases. The following is an extract from the fourth lecture on the formation of tubercles in internal organs:—

..... "The numerous checks, and repeated deceptions to which physicians are daily exposed in the diagnosis and treatment of tuberculous diseases, do they not prove that it is necessary to leave the beaten track of enquiry and pursue some other which is less fallible? You all know that *auscultation and percussion are useless in the diagnosis of pulmonary tubercles*. Both alike insufficient to announce the commencement of the mischief, they are superfluous at the very time that they become capable of indicating the presence of the tubercles; for then these are discoverable by other means, and alas! are too far advanced in their development to warrant our hopes of arresting their progress—at least in the generality of cases. I will even go a step farther, and say that the unlimited confidence, placed by the greater number of practitioners of the present day in auscultation and percussion, has had the effect of too often inspiring a fatal security in many tuberculous diseases, which are thereby allowed to advance in their progress, until this is revealed by physical phenomena at a period when remedial measures have but little chance of effecting any good.

"But what are the means, you will say to me, that are to be substituted in the room of auscultation and percussion? I answer, gentlemen, induction. Examine by these boasted methods this patient, and tell me what results you

obtain. Negative results, you will reply. And yet I maintain that he is tuberculous; for his father, his mother, and his brothers have all died of tuberculous disease; and he himself is affected with it in his chest at the present moment. Believe me, this plan is much less deceptive than the other one. I tell you, the inductive method cannot mislead you; for nature is invariable in its causes as in its effects; and the external signs of tuberculous scrofula must give you assurance that similar morbid productions exist in internal organs, and especially in the lungs.

It is by viewing the question from this elevated point of view, by studying it in all its *ensemble*, that you will be best enabled to comprehend it in its details; and these cannot be understood by the special methods of examination which have been so much recommended of late years.

The tuberculation of internal organs exhibits in its development the same phenomena as tubercles which are outwardly situated—there is no pain, and nothing of mechanical derangements."

In a subsequent part of the same lecture, M. *Lugol* thus treats of *Tubercles of the lungs*. "The existence of tubercles in the lungs is so frequent, that I must admit that they are present in all scrofulous persons. You know that all, or almost all, patients, who have pulmonary tubercles, are, or have been at some time, affected with tubercles in the neck; the majority have had during infancy this external sign of scrofula; while others have had it at a later period of life. I believe that pulmonary tubercles frequently exist in early youth; but it is chiefly about the age of puberty that they are apt to be developed. Puberty in truth seems to have a fatal specific influence in promoting their development; and in our wards at the present moment there is a case which seems to confirm this opinion. A scrofulous patient, who, although 22 years of age, exhibited none of the usual characters of marriageableness; he has just died; and in him no tubercles were found in the lungs.

Sometimes however pulmonary tuberculation seems to disappear about the period of puberty, and, ceasing for a number of years, it does not again develop itself perhaps until the 40th or 50th year of life."

M. *Lugol* subsequently alludes to the probable origin or *genesis* of tubercular formations. He regards them as *parasitical organs*, the development of which takes place *par intus-susception*. (Query. Should not this be rather *intus-conception*?) "They are not," says he, "mere degenerated organs, as many authors suppose; for if they were so, we should be able to distinguish the tissues of these organs in the tubercles, while they are still incipient. Far from this being the case, we observe that a tubercle is always the same from the very commencement of its formation, and that the organs, in which it is developed, impress no modification upon it, except perhaps upon its size and form."

After stating his opinion that inflammation does not engender, but merely promotes, the development of tubercles, he adds:

"It is impossible to see any other thing in tuberculation than a sort of parasitical function, which establishes itself by the side of some normal function, and to its detriment. This *epigenesis* is not more difficult to understand than that of hydatids, intestinal worms, lice, &c. with which it has a great affinity, and which are often found re-united in tuberculous children. A great analogy, I repeat, exists between the creation of lice, intestinal worms, and tubercles. All three are subject to *peripeties*, which seem to have some connexion with certain individual and atmospheric conditions. I have frequently seen spontaneous and abundant generations of lice take place in persons, who have subsequently died of tuberculous disease."—*Gazette des Hôpitaux*.

ORFILA'S RECENT EXPERIMENTS ON POISONING.

The following summary of the distinguished toxicologist's researches, which have been detailed at greater length in the two last Numbers of the *Medico-Chirurgical Review*, is taken from a recent number of the *Moniteur*.

M. *Orfila* commenced his experiments to-day, in one of the amphitheatres of the Faculty of Medicine, before the members of a Committee of the Academy and a numerous audience. The Professor made a number of experiments on poisoning with arsenic and with tartrate of antimony, and, by the programme which he distributed, he undertook to prove—

1. That these poisons, when introduced into the alimentary canal, or inserted into the subcutaneous cellular substance, are absorbed, and mingle with the blood, and are thus carried through all the organs of the body.

2. That they remain for a certain time in the substance of the different viscera and of the muscles, where their existence can be demonstrated by chemical processes; but that, from the time of the poisoning, a portion of that which has been absorbed leaves these tissues, and is eliminated by the urinary secretion.

3. That this elimination, which is much more rapid in the case of the antimonial than in that of the arsenical salt, continues during several days, until the tissues in question have been completely freed from the presence of the poison.

4. That it is therefore advantageous, and even indispensable, in the treatment of poisoning from these salts to promote the urinary secretion.

5. That it is possible in most cases to distinguish whether the arsenious acid and the antimonial tartrate, which are withdrawn from the viscera, have been absorbed during life, or have entered the body through *cadaveric imbibition* after death.

6. That the most convenient process for detaching minute quantities of these absorbed poisons consists in destroying the major part, or the entire, of the organic matter of the viscera and muscles, by carbonising them with pure concentrated azotic or nitric acid, and introducing the products into *Marsh's* apparatus somewhat modified.

7. That it is always easy to distinguish arsenic from antimony by the form of the spots left on the vessel, and at the same time to ascertain that these spots do not proceed either from the apparatus itself, or from the chemical tests employed.

8. That there exists in the bones, both of man and of certain animals, an arsenical compound insoluble in water.

9. That from the muscular flesh of the human body may be extracted a matter, which M. *Orfila* believes to be formed of exceedingly small proportions of arsenic, sulphur, and an organic substance.

10. That in the earth of some cemeteries there are found quantities, exceedingly small indeed but appreciable, of arsenic, which boiling water will not dissolve.

11. Finally, that it is easy, in a legal enquiry, to avoid those errors which might appear, at first sight, likely to arise from the admitted fact of the presence of arsenic in human bones and muscles, and in the earth of certain cemeteries.

M. *Orfila* then proceeded to make his experiments. Several dogs were poisoned; in some the salts were introduced into the stomach, and in others they were inserted under the skin: the latter method proved most rapidly fatal. The following results were obtained.

1. The urine of the dogs which had been poisoned yielded, when submitted to *Marsh's* apparatus, distinct traces of the metallic salts; while that of other dogs, to which no poison had been given, did not exhibit any traces of them.

2. A small portion of the liver of the poisoned animals—having been pre-

viciously charred with nitric acid, and the residue introduced into the apparatus—yielded numerous spots of arsenic; while the entire liver, spleen, and heart of a dog killed by hanging, on being submitted to the same chemical treatment, did not exhibit any traces of the metal.

ON GASTROMALACIA, OR SOFTENING OF THE STOMACH IN INFANTS.

It is scarcely ten years ago since the medical journals began to report for the first time any cases of this disease; although Dr. Jaeger of Stuttgart drew the attention of physicians to it in 1811. (Vide *Hufeland's Journal* for 1811 and 1813).

In the Summer of 1831 it shewed itself, with all the characters of an epidemic, at Gottingen and the adjacent districts; and its symptoms were then so well marked that, since this period, it has been impossible to mistake it for any other disease, even during the life of the patients.

Dr. Winter has published an excellent work on Gastromalacia, for which he received in 1833 the prize of the Royal Scientific Society of Gottingen; it was published in the succeeding year, and has contributed much to our more accurate knowledge of its pathology. The author of the preceding and following remarks, Dr. Iselin of Mullheim, has met with twelve cases of the disease, and, having also perused all the descriptions given of it by different writers, he is now induced to submit them to the notice of his professional brethren.

Description of the Disease.—According to my observations, says he, infants under twelve months of age are most subject to softening of the stomach; but it is certain that it is occasionally met with at any period of youth up to puberty.

Cammerer indeed (*Versuche uber natur der Krankhaften Magenerweichungen*) says that he has seen it even in adults. However this may be, it is admitted by all pathologists, that it is much more frequent during the first year than at any other period of life..... With respect to the duration of the disease, this is found to vary very considerably: sometimes it proves fatal within twenty-four hours, while in other cases it has lasted for several weeks..... According to its different characters, the disease is either *idiopathic* or *symptomatic*. Idiopathic Gastromalacia is either *acute* or *subacute*. In the first, the infant is seized with high febrile heat, vomiting and purging of serous acid matters; the features shrink, the eyes are sunken, and life is extinguished within twenty-four hours from the attack. In the *subacute* form, the disease commences usually with purging and generally also with vomiting; the febrile re-action of the system may be inconsiderable; and hence the symptoms may continue for several weeks.

Symptomatic Gastromalacia is usually preceded either by hydrocephalus, or by an acute exanthematous disease, or by some disease of the respiratory organs. In these cases, the course of the disease is almost always very rapid.

Symptomatology.—The disease exhibits two distinct degrees or stages—that of irritation, and that of palsy.

First Stage.—After two or three days of restlessness and general distress, a smart fever sets in, accompanied with great thirst, loss of sleep, and violent vomiting which cannot be checked. These symptoms are followed by a diarrhoea, at first of grey-coloured thickish matter, and then of a yellowish serosity which is found to be very acid. The face becomes sometimes very pale, at other times it is red and flushed, the features are often spasmodically con-

tracted, whenever the bowels are purged, or when the belly is pressed upon; there is usually complete anorexia, and a greater or less degree of tympanitic fulness. The whole abdomen, and more especially the ventricular region, is felt to be very hot, while at the same time the extremities are usually cold; the infant is continually crying and moaning; and often we observe partial sweating on the surface, especially on the back of the head, which is in general very warm.

The Second Stage is marked by frequent accessions of sudden prostration, amounting almost to a state of syncope; the breathing is short and much distressed; the pulse is very frequent and irregular; the child no longer cries, but keeps moaning in a sort of stifled manner; the pallor of the face increases, and the eyes become sunken; the sweats are more general; the belly remains warm while the extremities are cold; slight convulsions come on; sometimes there is squinting, and at other times the eyes are fixed, and only half covered with the lids. The purging and vomiting often subside or cease altogether, and the appetite returns for some time before death. When the child drinks, a peculiar noise is heard in the belly; aphthæ form in the mouth; the face acquires a bluish hue, especially around the mouth and eyes. Most frequently there is no coma, nor any loss of consciousness; but towards the close an excessive prostration, accompanied with frequent syncope and a very rapid pulse, so that death may occur without being perceived.

The *Subacute* form is usually attended with a diarrhœa, which resists all attempts to check it; sometimes vomiting is present and sometimes it is not. The course of the disease is more slow, and the child ultimately sinks, perhaps after more than once seeming to be about to recover.

The same thing happens when softening of the stomach occurs as a secondary and symptomatic disease,—in this case the symptoms become well marked only when the organ is very seriously altered.

On the whole, the tumefaction of the abdomen, and the great heat of its surface, while the extremities remain cold, are perhaps the most constant and characteristic symptoms of the disease. The former continues after death, so that the position and form of the stomach are often visible through the abdominal parietes. In addition to these symptoms, the peculiar expression of distress in the features, and the sunken state of the eyes, most striking indeed in the second stage of the disease, are rarely absent in any case.

The acute form is always attended with fever; in the chronic form, there are frequently intermissions; the groanings, the restlessness, the convulsive twitchings of the face, and the oppression, are almost constant symptoms in both.

The diarrhœa and the vomiting are, on the contrary, not so. In some cases there is constipation. The evacuations are always acid, although they vary much in consistence.

Convulsions characterise the stage of palsy; loss of consciousness is rare; aphthæ are frequent.

Anatomical Characters.—In three cases examined by Dr. Iselin, the following appearances were found.

The abdominal cavity was distended with gas, and the cellular tissue of its parietes was emphysematous; the stomach was projecting and tympanitic, and the intestines were in the same condition. In two of the cases, the stomach was perforated in three different places; in the other case, it was not perforated, but its tissue was so soft that it yielded on the slightest effort. In the cul-de-sac, especially where it is contiguous to the spleen, were observed transparent and colourless patches, on which the muscular fibres, almost in a diffused state, were visible. The rest of the stomach was not much altered, except in the neighbourhood of the cardiac orifice.

Around the softened patches, there were distinct traces of inflammation.

The softening takes place from within outwards, and the disease seems to begin with inflammatory action; the softening and the dissolution of the mucous membrane seem to be the result of it: the muscular and the serous tunics are subsequently affected. The intestinal canal, in my examinations, exhibited several inflamed and softened spots in different places. In one case, the duodenum was completely diffuent, as well as several isolated patches in the ileum. The mesentery was always inflamed and its glands in a state of engorgement. In every one of the three cases, there were several intussusceptions of the bowels.

The morbid appearances in the other viscera vary in different cases, none of them being constant or characteristic.

Causes of the Disease.—The *predisposing* causes seem to be—1, a cachectic state of system induced by bad nourishment, and the generation of acid in the stomach; 2, a hereditary cachexia, the result of a phthisical or other morbid condition of the mother during pregnancy; 3, dentition; 4, any sudden change in the food of the child, or weaning suddenly and at an improper time; and 5, the passions of the mother, which, by altering the properties of the milk, are so apt to derange the health of the child.

Jaeger knew a woman, who was of an impetuous character, and often suckled her children during a fit of passion, lose three of them from softening of the stomach.

With respect to the influence of poor food in inducing this disease, it is not easy to determine this influence exactly; for some children, to whom every attention is paid, die of it; while many, who are ill and irregularly fed, escape.

Perhaps the most influential exciting causes are certain, unknown indeed, atmospheric changes; since the disease has been generally observed to prevail at the same time as bilious fever, dysentery, ague, &c.

With respect to the more immediate causes of softening and perforation of the stomach, *John Hunter* attributed it, in almost all cases, to the direct influence of the gastric juice itself, operating as a solvent on its walls after death; but this opinion, although no doubt quite true in cases of sudden death occurring during a state of health, is certainly not admissible in such cases as we have been alluding to:—the softening is the result rather of a general alteration of the organism during life.

Cammerer has shewn, by experiments on animals, that vinegar softens the coats of the stomach; and also that the contents of a softened stomach, when introduced into the stomach of another animal, have the effect of softening this last—provided the influence of the nervous system has been previously paralysed either by death, or by division of the nerves.

Jaeger also, (*Hufeland's Journal* for 1811 and 1813,) alludes to a chemical action of the gastric juices; but he does not believe that this action can operate as long as the stomach retains its normal condition, and supposes that some other agency must always be co-existent. The gastric juice is, according to his opinion, altered by certain morbid states of the nervous system, and in this way there is generated an acid, which has the power of softening the stomach.

Heischmann and *Meckel* have adopted nearly the same views—with this difference, that the former of these writers regards the spleen as the source of the formation of the acid. *Lenhossek* is of opinion, that the symptoms of the disease, at least in its earliest stage, are those of a cerebral affection—which acts sympathetically on the stomach, so that this organ loses its power of resisting the solvent action of its own juices; at the same time it is probable, says he, that the excess of acid, produced by the cerebral affection, acts sympathetically on the juices of the alimentary canal.

Chaussier (Bulletin des Sciences Med. No. 53,) and *Lainé* (Medecine Legale,) consider the disease as an erosion or ulceration of the mucous membrane of the stomach, that is incessantly increased by the contact of the ichor secreted on the surface of the ulcer.

Rudolphi, in his *Grundriss der Physiologie*, suggests that the stomach of infants, when it is affected with disease, is subject to a sort of putrefaction, and that the commencement of the softening is preceded by an acid fermentation.

Winter regards softening of the stomach as a disease of the general organization; and this opinion is confirmed by the existence of a number of different maladies which are often associated with it—such as the exanthemata, erysipelas, induration of the cellular tissue, jaundice, aphthæ, inflammation of the abdominal viscera, phthisis, hydrocephalus, &c.

The simultaneous existence of gastric softening, and of the diseases now mentioned, makes *Winter* believe that the cellular tissue should be regarded as the propagator of the morbid process; inasmuch as it contains the capillary system in which the disease begins. As to the morbid matter, which is at once the principle and the agent of this alteration, we must seek for it in the blood itself.

Dr. *Iselin* is of opinion that the primary cause of the disease is inflammation; but he does not adduce any facts to establish his views.

Treatment.—What we know on this subject is most unsatisfactory.

Jaeger admits that he has failed in every case, in spite of blisters, sinapisms, friction with stimulating substances, the internal use of carbonic acid gas, opium, musk, zinc, &c. &c.

Dr. *Iselin* says that much may be done in the early stage of the disease, that of irritation and fever, by leeches to the stomach and head, and the use of antiphlogistics. Mercury and alkaline medicines* are always hurtful, he adds, while oleaginous demulcents are very useful.

When the inflammation and fever are calmed, a derivative action to the skin should be promoted by blisters, sinapisms, &c.: astringents and bitters should be given at the same time. Might not creosote be useful?

In the majority of cases, however, no treatment is of any avail, except perhaps in protracting the morbid action.

Let the physician not be deceived by occasional intermissions of the symptoms: they are greatly fallacious, being quickly followed by all the former distress. When the stage of paralysis has come on, the case is utterly hopeless. —*Heidelberg Klinische Annalen Band. V. hefte 3.*

SURGICAL CLINIQUE OF M. LISFRANC.

Fistula Lachrymalis.

In the ward St. Louis of our hospital (La Pitié), there is a patient who else-

* From the prevalence of acid in the secretions of the stomach and bowels, we might expect that alkaline remedies had been indicated in the treatment of this disease. We can confidently state from experience, that when such symptoms as have been described by Dr. *Iselin* to be the accompaniments of *ramollissement* of the stomach are present, minute doses of magnesia, or of chalk or soda, with or without opium according to circumstances, will be found to be the appropriate remedies: a blister on the epigastric region at the same time should not be omitted.—*Rev.*

where has had the operation for this disease performed upon him. The canula, left in the nasal canal, has ceased to be pervious; and, an abscess having subsequently formed at the lower part of the angle of the eye, the pus continues to escape by a small fistulous opening. The question comes to be, will it be necessary to extract the canula? This step may be attended with very great difficulty; the surgeon is sometimes obliged to desist from his attempts. In the majority of cases, it is better not to make the attempt. Ten years ago a patient, who had a canula in his nasal tube, and in whom there was considerable inflammation at the inner canthus, came under my care. I determined to extract the canula; but, previously to doing this, I deemed it right to subdue the inflammation by applying leeches over the mastoid process and poulticing the inflamed part—as it is an excellent axiom in practical surgery always to operate on tissues that are as healthy as possible. When the inflammation was subdued, the canula became permeable, and the patient was cured after the subsidence of the swelling. In the present case, the inflammation has ceased, but a fistula remains. Emollient injections have been ordered to be used; and, in the course of two or three days, we shall pass a stylet along the canula to clear it. If the ulcerated opening does not heal, we shall touch it with the nitrate of silver; but it will most probably cicatrize, as soon as the tears do not pass through it. Six days afterwards this prognosis was verified, and the patient left the hospital cured.

Phagedenic Ulcers.

In the two cases at present under treatment, remember (says M. Lisfranc, addressing his pupils) that we have not limited our treatment to merely applying the liquid proto-nitrate of mercury to the surface of the sore. In these, as in all other similar, cases, when the ulcers have an inflammatory appearance, we premise the detraction of blood from the arm; and thus we obviate the increase of irritation and general fever that might follow the application of the caustic.

By adopting this line of treatment, the ulcers in these two cases speedily advanced to cicatrization; but then, without any discoverable cause, they again relapsed to their former condition. Subsequently however they have re-began to heal; and little now remains for us to do; for both will speedily be well. In one of the cases, the amendment may be dated from the period when he became affected with erysipelas, which was epidemic in the hospital at the time. The inflammatory action seems to have changed the mode of vitality in the tissues. Now the operation of a caustic, applied lightly over the surface of a part only of an unhealthy sore, may be somewhat similar to that induced by erysipelatous inflammation. Our object is not to produce an eschar, but to modify the vitality in the parts around the ulcerated tissues.

White-Swelling of the Wrist with Fistula.

Amputation of the fore-arm had been recommended to the patient at another hospital. M. Lisfranc, however, put him on a course of the muriate of barytes, according to the formula of M. Pirondi; and under this treatment the case eventually recovered. From the two fistulous openings over the carpal joint, several small portions of decayed bone escaped; and, in the course of a short time, no traces of any denuded bone could be detected by the probe.

Engorgement of the Mamma in a Man.

This is a rare occurrence in men; in the present case, the swelling came on spontaneously, without any previous injury of the part. In treating the case, we have acted in conformity to the distinction which we have so often insisted upon between the condition of sub-inflammation and that of non-inflammation. At first there was a sub-inflammatory action, denoted by slight increase of heat and swelling. On two occasions, 30 leeches were applied around the swelling, and then emollient poultices were used; hemlock pills were taken at the same

time internally. Under this treatment, the pains ceased, and the swelling diminished very considerably. Frictions with the ioduret of lead ointment were then employed, and compression by means of disks of agaric and bandages were kept up: the use of the hemlock internally was continued.

"Attend," said M. *Liefranc*, "to this case, and you will be able to judge of the practice of those surgeons who think of nothing but of excision in all cases of white swelling or engorgements, who call amputation of a mamma a trifling matter, and who cannot understand that the remedial means which we employ, even when they do not succeed in preventing the necessity of an operation, have at least the effect of rendering the risk of it much less, by counteracting the unhealthy disposition which unquestionably is apt to lay the foundation for a relapse."

False Anchyloses.

You are aware that a year or two ago the practice of violent extension, by means of a machine, in cases of false ankylosis, was highly spoken of by some of our surgeons: we however resisted the almost general favour with which this new mode of treatment was received; and what we predicted of its results has unfortunately proved to be too correct. More than a month before it was utterly abandoned, we had said to its admirers, "you will at least produce a sprain."* You know, if we have been wrong. During that time, we treated, with slow and gradual extension, two patients, in one of whom ankylosis followed a cured white-swelling, and in the other a wound of the joint. You have seen both patients walking about with their limbs extended. Of the other two patients, at present under our care, one came into the hospital for an abscess in the iliac fossa extending down under Poupart's ligament to the upper part of the thigh: this abscess, after being freely opened, healed up favourably; thanks to the application of a number of leeches along the *trajet* of the abscess, after it was opened. But two anchyloses remained: one of the hip and the other of the knee-joint. The second patient, in whom the ankylosis was the result of a cured white-swelling, was submitted to the same mode of treatment. Although the extension, by the machine we used, was slow and very moderate, some degree of inflammation of the joint was induced, which obliged us to discontinue its application for a time, and to have recourse to ordinary means. In a few days the inflammatory symptoms were reduced, and the extending machine was again applied. At the present time, we have succeeded in effecting an almost complete *redressement* in both cases.

White Swelling.

We find here the application of the beautiful axiom of Hippocrates: *expectantia fallax*. This patient has come to ask our assistance for a white-swelling of the knee-joint, accompanied with much pain and heat. We have had recourse to antiphlogistic remedies, taking care to employ with discretion evacuations of blood, in order that we might not injure the ground on which we had

* M. *Liefranc* is here alluding to a mad proposal of a surgeon in Paris to place an ankylosed limb in a certain machine which he had contrived for the purpose, and by which it might be perfectly extended in the course of one or two sittings! As a matter of course, several cases in which a cure was effected were related! We often wonder how the poor patients in the French hospitals allow themselves to be experimented upon in all sorts of ways. There is M. *Guerin*, at the present time, boasting of having divided upwards of 30 muscles and tendons in the same patient, and at one time, for the cure of various deformities! A gentleman, recently returned from Paris, told us the other day that it is by no means an uncommon thing when cupping is ordered, to see one of the *internes* make several cross incisions with a scalpel, in place of using the cupping scarificator.

to carry on the war : subsequently we have used discutients, when the chronic state of the disease was definitively established. For a time our success seemed complete ; the pain and swelling had nearly ceased ; when, most unexpectedly, and without any appreciable cause, these symptoms, accompanied with effusion into the joint, returned as severely as ever. The pains yielded for a time to the endermic use of the muriate of morphia ; but again they became most distressing. We shall be obliged to amputate the limb ; for in all probability there is erosion of the cartilages, and possibly caries of the bones. Nothing is more insidious than the prognosis of chronic swellings of the joints. Here is a second case :

A young man fell upon his knee, four years ago ; the slight inflammation which followed was readily dissipated by the use of leeches, &c. The symptoms however returned every now and then ; and ultimately the joint became permanently engorged. The lymphatic constitution of the patient forbade the use of very active depletory remedies ; at first they produced most satisfactory results ; and after a relapse of the symptoms, the employment of the mercurial ointment, according to the plan recommended by M. *Serre d'Ures*, again gave hopes of a decided amendment. This however was only temporary ; and we therefore suspected that there must be, in some part of the system, a principle or element which nullified all our exertions. We suspected the existence of tubercles in the lungs ; and, *dans une grande consultation*, this suspicion was proved to be, alas ! too correct.

Contraction of the Rectum ; Indurations within the Gut, &c.

We are convinced that, in a far greater number of such cases than is generally supposed, the local disease is of a venereal origin. We must not allow ourselves to be misled by the assertions of the patients that they never had syphilis ; for often they will deny it altogether, or so mis-state the facts as to impose on the surgeon.

On the other hand, some surgeons have confounded the venereal disease with genuine cancer of the rectum ; and even the great *Dessault* has recorded cases of cure of what he calls cancer. In the present case, our patient says that the only sexual disease he has had for the last four years has been gonorrhœa ; nevertheless I gave him mercury internally, and ordered him to have pieces of lint, gradually made larger and larger, introduced up the gut, and kept there at first for a short time, and subsequently for a longer period. Gum-elastic bougies were afterwards substituted for these ; and the result has been that now only a few small isolated indurations remain.

In another, but a much more severe and protracted, case of the disease, which has been in the hospital ever since last year, the gut was contracted beyond the reach of the finger ; it was also hard, *bosselé*, and adherent to the subjacent tissues, which were then in a state of engorgement ; three fistulæ traversed the indurated tissues.

As this patient had been affected with syphilis, we administered mercury at the same time that we used local remedies ; and now very slight traces of his disease remain.

I may here mention that, in the year 1829, I admitted a case of indurated and ulcerated rectum, which I considered to be cancerous and to require the excision of the lower part of the gut. As the weather was excessively cold at the time, the operation was deferred, and discutient remedies along with compression were resorted to : the cold weather ceased, but there was then no longer any need of an operation ! he was completely cured !! The difficulty of distinguishing cancerous from non-cancerous disease is common alike to the rectum and the uterus.

(*Remark.*—This admission of M. *Lisfranc* will account for the number of

operations, often quite unnecessary, which are performed by the French surgeons. A vast number of cases are given over by them to the knife, where a little patience and the use of appropriate constitutional remedies would most assuredly effect a cure. The contrast between French and English surgery in this respect is most favourable to the scientific skill and humanity of our practitioners.—*Rev.*)

Compound Fracture of the Leg.

The upper fragment of the tibia projected for at least three inches through the wound. As the bone was not deprived of its periosteum, we reduced it without sawing any portion of it off: there was a vast effusion of blood, and great inflammatory tension in the part. By employing our usual method we brought every thing, with the greatest simplicity, into a quiet state. (Bleeding from the arm on the first day; local bleeding, as a revulsive, for the following four or five days; emollients, and low diet until suppuration commenced.) As the fragments of the bone remained in apposition without the employment of any apparatus, we did not apply one, and merely secured the foot by compresses fixed on each side to the pillow on which the limb reclined. The pus flowed out by the opening, which was on the inner side of the leg. Much embarrassment would have been experienced, if we had not dispensed with the use of an apparatus.

(*Remark.*—We never observe any allusion, in the French writings on surgery, to the simple and admirable plan of treating compound fractures and dislocations by merely laying lint well wetted with the blood of the wound over the seat of the injury, after the bones have been properly reduced. When the blood dries, the lint forms an excellent protection to the wound, completely excluding it from the air, and favouring cicatrisation. The readers of Sir A. Cooper's classical work on Fractures and Dislocations need not be reminded of the numerous cases which he has treated successfully in this simple manner.—*Rev.*)

Immense Enlargement of the Testicle.

The testicle had increased to at least ten times its normal size. Castration had been recommended to the patient elsewhere. According to our usual practice, we had more faith in a rational treatment. At first antiphlogistic, emollient, and narcotic remedies were used; and then discutients were applied, when all traces of inflammatory action had subsided. Under this mode of treatment, the swelling was reduced nearly four-fifths of its volume. An abscess formed, and was opened; it was of a scrofulous character. Within the last week, another abscess has made its appearance, and we have been obliged to discontinue the use of discutients, and again have recourse to antiphlogistic, &c. remedies.

Fracture of both Bones of the Leg in an Infant; False Joint.

Soon after birth this infant had the misfortune to have both bones of the leg broken: the solution of continuity, it seems to us, is too high up to be a mere separation of the epiphyses. However this may be, it has not consolidated; and a false joint has formed. The tendo-Achillis, no longer meeting with any resistance, has drawn the foot upwards and backwards, and keeps it in that position.

Our intention is first to divide the tendon; and then try some means to effect a consolidation.

Erectile Tumor of the Tongue.

Our patient was sixty years of age, and, for upwards of thirty, had had on the right side of his tongue an erectile tumor, of the size of a pigeon's egg: it extended from the point of re-union of the anterior with the middle third of the

organ to its base. We seized the tongue with a strong hook, and found no little difficulty in preventing its retraction into the mouth: so powerful was the action of its muscles, that we were afraid that the hook would force its way out. The excision was however at length effected, and has succeeded perfectly. For a day or two, there was a tendency to cerebral congestion; but this was relieved by bloodletting.

Ulcerations of the Cervix Uteri.

The frequency of this disease is truly astonishing. I have seen at least several thousand cases, the true nature of which must certainly have been mistaken, if the speculum had not been used. Even with the aid of this instrument, ulcerations of the cervix may be overlooked; for, in many instances, there is no appearance on the outer surface of the cervix: it is indeed usually tumefied and puffy; but such a condition is common both before and after menstruation, when no disease exists. By introducing the finger fairly within the cervix, we find that, if any ulcerations be present, its inner surface, instead of being smooth and polished like the pleura, conveys to the finger the same sensation as the mucous membrane of the stomach does, when it is inflamed, villous, and softened.

Another means of diagnosis is by introducing a smooth probe into the cervix and moving it about freely; if any ulcer exists, the surface of the probe, when withdrawn, will probably be spotted with blood.

As to the treatment of ulcerations of the cervix uteri, by far the best method consists in cauterising the diseased surface, after all symptoms of inflammatory action have been relieved, with the acid nitrate of mercury. Some cases are cured by three or four applications of the caustic, while others require as many as eighteen or twenty.

Remark.—We need scarcely observe that the practice of using the speculum vaginæ in every woman, who has any symptoms of uterine ailment, is not likely, for very obvious reasons, to be so much in vogue in this country as in France. Fortunately in a vast majority of instances, there is no necessity for it; and as to M. *Liefranc's* assertion, that he has treated many *thousand* cases of ulcerations of the cervix uteri, we feel assured that, in the greater number of them, there were no ulcers at all.—(Rev.)—*Gazette des Hôpitaux*.

TREATMENT OF FISSURES OF THE ANUS WITH RHATANY INJECTIONS.

M. *Brettonneau*, the celebrated physician at Tours, seems to have been the first who tried and recommended the use of injections of a strong decoction of Rhatany root in cases of that very troublesome and distressing complaint—fissure of the anus. Constipation is in most cases the cause of the malady, and also the chief impediment to its cure. Now such a state of bowels is very frequently accompanied with a great dilatation of the rectum, especially of that part of it immediately above the sphincter ani. In this dilated portion of the gut the feculent matters are apt to accumulate, and there form an immense hardened mass, the evacuation of which often gives rise to excessive pain, almost as severe as that of child-birth. M. *Brettonneau*, by attending to these circumstances, came to the conclusion that the enfeebled and dilated state of the bowel might be most effectually cured by the use of topical astringents, applied directly to its surface. For this purpose, he used a solution of the extract of rhatany in water, to which some of the tincture of the same was added. Several patients, who had for long suffered both from constipation and from fissure of the anus, were cured of both these complaints by using the Rhatany injection. But it is not only in those cases of fissure of the anus, which are accompanied with a confined state

of the bowels, but also in many other cases, that a cure has been effected with the remedy.

M. *Trousseau* writes: "within the last few months, I have treated five cases with this remedy; of these four have been cured. M. *Marjolin* has also succeeded in one case, and M. *Berard* in two. My plan of using it is to order the patient to take an aperient enema every morning, and half an hour afterwards an injection made of a strong decoction of Rhatany root, which he should endeavour to retain; this injection should be repeated in the evening: when the pains attending the act of defecation become abated, one injection in the course of the twenty-four hours will be sufficient."—*Journal des Connaissances, &c.*

SUBCUTANEOUS SECTION OF FORTY-TWO MUSCLES, TENDONS OR LIGAMENTS, IN THE SAME PATIENT.

"I have the honor," says M. *Jules Guérin*, "to communicate to the Academy the account of an operation, which, by its character of generality and its immediate results, appears to me destined to fix in a definitive manner the value of a principle, which I have endeavoured to explain in my memoir on subcutaneous wounds—viz: that wounds made under the skin, and thus out of the reach of the air, are exempt from all tendency to suppurative inflammation.

On the 25th of this month, August, I made, in the case of a young man twenty-two years of age, the subcutaneous division of forty-two muscles, tendons or ligaments, to remedy a series of deformities of the trunk and extremities, induced by the active retraction of these muscles and ligaments. This series of operations required twenty-eight incisions of the skin. The following muscles, tendons and ligaments were divided: the pectoralis major, the brachial biceps on each side, the two pronatores radii teretes, the two radiales antici, the two flexores digitorum sublimis, and the two palmares parvi; also the tendons of the ulnares antici, those of the palmares magni et parvi, and those of the abductores pollicis. Besides these muscles and tendons in the arm and of the elbow and wrist, the following also in both of the lower extremities were divided—at the knees, the sartorius, the biceps, the semi-membranosus, the semi-tendinosus, the rectus internus, the fascia lata and external lateral ligaments, and, at the feet, the tendo-Achillis, the tibialis anticus, the extensor communis, the extensor proprius pollicis, and the peroneus anticus.

Voici! the immediate results of these operations:—The patient experienced only *mediocre* pain and fatigue; he uttered no complaint during the performance of the operations, which occupied a full hour. Soon afterwards he fell asleep; and the following night and next day he remained quite tranquil. No sign of inflammatory action any where presented itself; and by the third day the twenty-eight wounds were completely healed. Surely such a case as the present must convince every one of the perfect innocuity of the subcutaneous division of muscles and other parts."—*Gazette Medicale.*

POST-MORTEM EXAMINATION AFTER SUCCESSFUL LIGATURE OF THE COMMON ILIAC ARTERY.

M. *Salomon*, professor of surgery at St. Petersburg, tied the left common iliac artery in a case of aneurysm in the groin: the success of the operation was complete. Ten months afterwards, the patient died from the formation of a large abscess in the iliac muscle of the affected side. The following description is given of the state of the iliac and femoral arteries, observed after an injection had been thrown into the descending aorta.

" The injection had passed into both lower extremities ; the left common iliac artery was found to have been tied at about an inch above its division ; from this point to its junction with the aorta, it was converted into a firm ligamentous cord. A small quantity of the injection had reached the left external iliac by the hypogastric or internal iliac, which communicated freely with the corresponding vessels on the other side. The left femoral artery began to be injected at about 54 millimetres below Poupart's ligament. The right common iliac, external iliac, and femoral arteries, with their branches, were much dilated ; likewise the left lower lumbar arteries, which anastomosed with the circumflex artery of the ileum. The middle artery of the sacrum also, but principally the branches of the ischiatic and common pudic, and also the vesical and hæmorrhoidal vessels on the left side, were found much larger than usual ; they formed in the pelvis a considerable vascular network, which communicated freely with the vessels of the opposite side. The anastomoses between the branches of the ischiatic and of the deep femoral artery were most conspicuous on the back of the limb. The left inferior epigastric—which, as well as the circumflex artery of the ileum, was obliterated at its commencement—was contracted, and received its blood in part from the superior epigastric, and in part from its fellow on the right side. The left obturator artery was considerably dilated, and communicated in the thigh with branches from the femoral. The deep femoral and all its branches were filled with injection, although the vessel was ligamentous at its origin.—*Gazette Medicale, Aout.*

ANEURISM OF THE CAROTID: LIGATURE BEYOND THE TUMOUR: CURE.

A woman, 63 years of age, had a pulsating tumor on the left side of the neck, and immediately opposite to the sterno-clavicular articulation, which very seriously distressed her breathing. This aneurismal tumor was considered to be of about three years' standing. As it was situated so low down the neck that it was impossible to put a ligature around the artery between the seat of the aneurism and the heart, M. Colson determined to try the operation of *Brasdor*, that of tying the vessel beyond the tumor. The success of the operation was eventually complete ; the pulsations of the swelling became gradually less and less, and the dyspnoea was effectually relieved. It is now a twelvemonth since the operation was performed ; the tumor is reduced to the size of a small nut, and still communicates very feeble pulsatory movements.

When this case was communicated to the Royal Academy, M. Larrey, who had been appointed to report upon it, expressed his utter disapproval of the *Brasdor* operation, in spite of the success which attended the present and a few other cases. He had in his own practice obtained such satisfactory results from the application of ice and of moxas in the treatment of aneurismal tumors, that, in his opinion, no other means except these should be used, when the ordinary operation cannot be performed. He alluded to a case of aneurismal varix between the external iliac artery and vein, which he cured in this way, although the tumor was so large that it reached, and even passed, the level of the antero-superior spine of the os ilii.

M. Blandin was unwilling to go so far, as M. Larrey, in condemning the *Brasdor* operation in all cases without exception. No one indeed can deny that the application of ice and of moxas over aneurismal tumors has proved quite ineffectual in a certain number of cases. Then what is the surgeon to do ? Is he to refuse to try the effect of an operation, which is certainly not a good one, but which has succeeded a few times ?

M. Velpeau agreed with the observations of M. Blandin. The *Brasdor* operation has now been performed about 20 times, and five or six of the cases

have terminated favourably. As far as he knew, it had been performed in France only twice—by M. *Dupuytren* and M. *Langier*—and in both cases unsuccessfully, before the present case of M. *Colson*. The method of M. *Larrey* ought certainly to be fairly tried before we resort to so uncertain an operation as that of tying a large artery beyond an aneurismal sac. Perhaps no artery is so favourably situated for the Brasdorian operation as the common carotid, seeing that no branches are given off between the sac and the point at which the ligature is placed. In two or three cases, this operation has succeeded even in cases of aneurism of the arteria innominata.

VARICOSE ANEURISM BETWEEN THE INTERNAL CAROTID ARTERY AND THE INTERNAL JUGULAR VEIN.

The following description of the appearances found on dissection, in a case of gun-shot wound of the mouth, which proved fatal about a twelvemonth after the accident, by inducing cerebral disease, will be read with interest :

..... " After carefully dissecting the superficial muscles of the neck, and having removed the *sterno-cleido-mastoideus*, the *hyo-scapularis*, and the three small muscles which are attached to the styloid process, I sawed the inferior maxilla across and disarticulated it from the socket. Having done this, it was easy to follow the carotid artery and the internal jugular vein along their whole course. At the point situated immediately behind the angle of the removed jaw, we perceived the ball lodged within the jugular vein. The parietes of the vessel from this point upwards to the base of the skull were much thickened and had acquired nearly the consistence and firmness of the coats of an artery ; the lower part of the vein retained its natural thinness and shining aspect. On tracing the internal carotid artery it was found to form a pouch of the size of a pigeon's egg just before entering the canal in the temporal bone. This pouch contained several coagula, which were partly sanguineous and partly fibrinous. At its base, it was found to communicate with the internal jugular vein ; and from this point the artery retained its ordinary form and dimensions. In passing a probe from the aneurismal pouch to one side it readily entered the cavity of the internal carotid ; and when it was directed to the left side, it entered the jugular vein just where the ball was lodged, and where it had become so adherent that it could not be pushed either up or down."

Those who may wish to know the particulars of this very curious case will find it recorded in one of the July Numbers of the *Gazette Medicale*.

ABLATION OF THE CLAVICLE.

In the number of the *Gazette Medicale* for last July 18th, we find short reports of two cases, where the entire clavicle was removed in consequence of necrosis. In both cases, the bone had become quite moveable ; and in one of them it would seem that no incisions were necessary, as the bone was removed with a pair of forceps through an ulcerated wound, that had long existed. In the other case, the necrosed clavicle was cautiously separated from its attachments to the sternum and the first rib, and then from its attachments to the acromion of the scapula : these steps were effected without much difficulty, and the entire clavicle was then easily brought away. Both of these cases occurred in scrofulous children ; and the two young patients not only recovered their health perfectly, but also retained an almost complete use of their arms.

NOTICE OF THE MEDICINISCHE JAHRBUCHER.

We have received the 29th volume of this Austrian journal—one of the very best that is published in Germany—from its chief editor, Professor *Rosas* of the University of Vienna. It consists of four numbers, one appearing every three months. The contents are arranged under several heads.—1. Original essays and communications. 2. Medical statistics. 3. Analytic notices of the most eminent works; and 4. Miscellaneous extracts from the leading medical journals of Germany and of other countries. As usual with all German writings, this Journal is characterised rather by curious reports and elaborate erudition, than by strictly practical information. We miss the clinical observations, the useful hints and precepts, and the well-selected extracts from new books, which to an English reader constitute the value of a medical journal. The following excerpts will explain our meaning, and are a fair specimen of the contents of the “*Medicinische Jahrbucher*.”

CASE OF MENSTRUAL FLUX IN A MAN.

A tall but rather delicately formed young man, 21 years of age, and whose health was on the whole perfectly good, observed for the first time in February 1838, that there was a spontaneous discharge of blood from the urethra: this discharge continued for four days. When it ceased, he found himself lighter and altogether better than he had been for some time before. From this period, the discharge, always preceded for two or three days by headache, vertigo, &c. returned every fourth week, remaining each time two or three days. His health was always better immediately after its cessation. Various means had been tried to stop this anomalous evacuation, but without avail. (It is not stated how long the man had been subject to it before Dr. *Julius*, the reporter of the case, saw him.)—*Rev.*

EXAMINATION OF THE AUDITORY ORGANS IN A DEAF AND DUMB PERSON.

A youth, who had been deaf and dumb from his infancy, was admitted into the institution for such invalids at Vienna, when he was eight years of age, and he died there in his twelfth year. The dissection of the encephalon, and more especially of every part connected with the auditory function, was performed with great care, and the report is given at full length. The following is a summary of the more remarkable abnormal appearances.

“ This examination of the organs of hearing shews that the abnormal condition of these parts depends upon a congenital defective formation of the bony parts, some of these being imperfectly developed, while others are developed in excess. To the *first class* may be referred the absence of the *promontory* and of the *foramen rotundum*, the complete fusion, so to speak, of the *stapes* with this foramen and with the Fallopian canal, the want of the pyramidal-formed elevation, by which is caused in part the deficiency of the *stapedius* muscle, and the imperfect formation of the cochlea. To the *second class*, the greater accumulation of osseous matter in every part of the cranial bones, and the superfluous formation of a roundish little bone between the bony process of the *incus* and the head of the *stapes*. The circumstance too of the want of the usual proportion between the middle and the posterior hollows of the cranium, in consequence of which the whole skull has somewhat of an oblique direction—this has been observed in two other cases of deaf and dumb persons—and, on the contrary, the perfectly normal formation of the nerves, which are expended on the tympanum and on the labyrinth, deserves to be noticed.

From these facts it seems that, in the present case, at least, the deafness was owing not to any defective state of the nervous apparatus of the ear, but only to some irregularities in the formation of the bony parts of the tympanum and of the labyrinth."

ANÆSTHESIA OF THE TRIGEMINUS NERVE.

A woman, 42 years of age, had the misfortune to fall and strike the back of the head on the edge of a stair. A year afterwards the catamenia ceased altogether, and from this time she began to suffer from frequent attacks of most violent sneezing. No unusual appearance could be detected in the nostrils; and it was therefore suspected that there was an irritation of the fifth pair of nerves in the cranial cavity. Along the course of the first and second divisions of the trigeminus there was no loss of sensibility; but the third division was decidedly *anæsthetic*.

The left half of the under lip, both on its inner and its outer surface, and the left half of the chin, were quite insensible, even when pricked deeply with a needle: the inner portion of the muscle of the corresponding ear and of the meatus auditorius were equally dead to all impressions. The teguments of the left temple near the hair, and also the entire left half of the tongue, were perfectly insensible alike to injury and to changes of temperature: this side of the tongue too had lost its sense of taste. But when the skin of the temple near the forehead was pricked, the patient immediately complained—in consequence of this part being supplied with twigs from the *frontalis* nerve. On the right side all the corresponding parts were quite sensible; and even in the left eyelids the other sensory nerves retained their integrity, both as respected sensation and power of motion. The organic and nutritive functions of all the parts, which were insensible, were not at all impaired. The patient eventually died of dropsy.

Dissection.—At various points on the surface of the brain there was an exsudation of lymph; and on the lower surface of the posterior lobe the cerebral substance was found in a state of *ramollissement*, to the extent of an inch or so. The third, or submaxillary branch of the trigeminus pair on this (the left) side, where it entered the foramen ovale, appeared to be enveloped with a red vascular network, composed partly of fibres and partly of transparent vesicles. On close inspection, it seemed to be either an exsudation on, or an hypertrophied state of, the neurilema: the substance of the nerve itself was swollen, of a yellowish colour, and somewhat harder than it usually is. But it was only that portion of the third branch, which arises from the Gasserian ganglion, that was so altered. The motory portion on the inner side was unchanged, and coalesced with the larger division beyond the diseased point. The various twigs to the pterygoid and buccinator muscles, to the temple, the tongue, and the lower jaw, were throughout in a normal condition, as well as the third branch of the right trigeminus, and also the glosso-pharyngeal on both sides.

CURIOUS CASE OF ENCYSTED TUMOR ON THE EDGE OF THE LIVER.

A delicate woman, of about 30 years of age, had observed, for some time before her marriage, a soft uniform swelling in the precordial region, which had gradually appeared without any appreciable cause, was always most prominent when the stomach was distended with food, and gave rise to a certain feeling of oppression and uneasiness at that time. During her first pregnancy she found that, immediately after the morning attacks of vomiting, the swelling was always much smaller than it was just before; but when these ceased, that it became

larger and larger until it acquired the size of a goose's egg. After delivery, the swelling subsided altogether; but, during her second pregnancy, it re-appeared, and caused greater uneasiness than on the former occasion.

The operation of an emetic always caused a diminution in its size, but when this was over, the swelling gradually returned. The woman became phthisical and died.

Dissection.—The lungs were loaded with tubercles in various stages of development. On opening the abdomen, the upper part of the left lobe of the liver was found to be adherent to the cardia by a tumor of the size of a man's fist. This tumor proved to be of an hydatidic character; and its parietes consisted of three distinct membranes, which inclosed a quantity of yellowish serum: it was an acephalocyst of *Lamæc*. At one point of its circumference there was a fistulous opening, which communicated with the cavity of the stomach, and by which therefore its contents were evacuated during the efforts of vomiting.

NUX VOMICA IN THE VOMITING OF PREGNANT WOMEN.

Dr. Kroyler, of Presburg, assures us that minute doses of the *nux vomica*, given in some aromatic or in cherry-laurel water, are a *specific* remedy against the troublesome vomiting, to which many women are subject during the early months of pregnancy. In order to insure success, the bowels must be kept in a gently open condition, but neither purged nor constipated. The author says, that the effects of this remedy are certain, provided the vomiting is the result of pregnancy alone, and is not dependent on any morbid state either of the stomach or of any other organ. The dose recommended is from two to four drops of the tincture—the strength of this is not stated—to be gradually increased to ten, twelve, or eighteen drops every morning in bed, and again in the evening. In many cases it proves quite successful within a week or even a shorter time; in other cases its use must be continued longer.

CASE OF SPONTANEOUS HYDROPHOBIA.

A middle-aged man, while under treatment for venereal complaints, was unexpectedly seized with a complete inability to swallow any thing either solid or fluid, and with such well-marked hydrophobia that the mere sight of fluids brought on strong convulsions. His countenance betrayed the most intense anxiety, and every now and then he gasped at the air whenever the gentlest breath of it was blown upon him.

Neither he nor any of his acquaintances remembered that he had ever been bitten by a dog or any other animal. As he could not swallow powders of calomel and belladonna, the latter substance was applied to a blistered surface on the epigastric region, and mercurial ointment mixed with extract of belladonna was rubbed in along the spine. The poor fellow made the most violent efforts to swallow food and medicine; but all without avail: he was immediately seized with the most excruciating convulsions, during one of which he sprung out of bed like a maniac, and with foaming mouth tried to bite the attendants; while standing, he fell down and expired. The hydrophobic symptoms had lasted for about 60 hours. Permission could not be obtained to examine the body.

The preceding case is the more remarkable, as the spontaneous hydrophobia or dread of fluids was not merely a symptom, but the actual and essential disease, and terminated with genuine rabies. It is therefore beyond all doubt the *rabies canina* may be developed as a primary disease in the human being. The circumstance of priapism having preceded the hydrophobia appears to

confirm the causal connexion, although this is disputed by many, between the disease and excitation of the generative organs. (This case is taken from *Caspar's Wochenschrift*, No. 24, for 1839.)

ON THE EXTERNAL AND INTERNAL USE OF VERATRINE.

The principal action of this very potent substance seems to be on the spinal-marrow; for, soon after it has been swallowed, the person begins to experience a dull burning pain in the sacral region, various uneasy feelings through the abdomen, increased watery and slimy evacuations from the bowels, but rarely any diuresis. If its use be still continued, it causes dryness and a sense of burning in the mouth, intense thirst, nausea, vomiting, bloody stools, coldness of the limbs, trembling, syncope, delirium, and paralysis: the urine is usually scanty, thick, and of a deep red colour. The surest antidote to these symptoms is strong coffee with lemon-juice.

The veratrine, endermically used by sprinkling half a grain on the epigastric region deprived of its epidermis, excites nausea, sense of tightness in the chest, electric-like dartings through the chest and abdomen, and painful twitchings in the limbs. In some cases of palsy it has been used with decided advantage; but, as it is certainly inferior to strychnine, we can generally dispense with it. The best mode however of using the veratrine is friction with an ointment containing from ten to twenty grains, rubbed up with an ounce of lard: its peculiar electric-like local effects are most easily obtained in this way. It has been used with excellent effects in all forms of purely-neuralgic suffering, especially in *hemicrania*, *ischias nervosa*, *neuralgia facialis*, *asthma*, *convulsions*, and in some most excruciating neuralgiæ arising from calculus in the kidneys:—in many cases, combined with the extract of belladonna, it is still more efficient.

Another effect of veratrine is the excitation and regulation of anomalous actions (*thätigkeitsausserungen*) of the nerves proceeding from the spinal marrow. If an ointment—composed of from two to four grains and an ounce of lard—be rubbed along the spine, twice a day for five, six, or eight weeks, much relief will often be experienced in weakness of the lower limbs, (especially if this has been the effect of seminal irregularities,) in rheumatic pains, in debility of the bladder and sphincters, in menstrual cramps,* in convulsive affections of the urinary organs, in suppressed hæmorrhoids, in pertussis, and probably also in diabetes mellitus. Dr. *Reiche*, the writer of these remarks, has never observed that the veratrine has any diuretic effects; although he has certainly found that many of the distressing symptoms of hydrothorax and hydrops-pericardii are much relieved by its external use. That it exerts emmenagogue powers cannot be disputed. It seems also to stimulate the absorbent vessels of the part, and it has therefore been used with advantage in the dispersion of some subcutaneous tumors.

In a subsequent article, taken from the *Medicinische Zeitung*, there is reported a case of severe intermittent neuralgia of the frontal nerves, which, after resisting the internal use of quinine and other remedies, yielded at once to the application of veratrine ointment—two grains to the drachm of lard—to the forehead previously denuded by a blister of its epidermis. The effect was most rapid and well-marked.

* Some English practitioners have of late recommended frictions with veratrina ointment over the sacrum as a sovereign remedy in certain intractable cases of dysmenorrhœa. We have no experience of it ourselves; but we are in the daily habit of using the belladonna plaster in such cases with admirable effect.—(*Rev.*)

CASE OF OBLITERATION OF THE AORTA.

A soldier, who had served in all the German campaigns from 1790 to 1815, had for five years before his death suffered a great deal from difficulty of breathing and cramps in the stomach :—these latter were often excessively severe, and brought on such violent vomitings, that all food was rejected. To these symptoms were gradually added most distressing palpitations of the heart and anasarous swellings of the lower limbs. Under the use of the *magisterium bismuthi* and digitalis, the patient experienced great relief: the pulse however continued to give out a peculiar *whirring* sensation, which lasted to the period of the patient's death; this occurred very suddenly, while the patient was sitting at table.

Dissection.—The brain was very soft; its vessels empty of blood; and the basilar artery was ossified: four ounces of serum were found at the base of the cranium.

The heart was greatly enlarged and hypertrophied: the valves however, in both cavities, were healthy. The aorta from its commencement to the giving off of the arteria innominata was much dilated, and the latter vessel was nearly twice as large as usual. The left subclavian artery was in a similar condition, but the left carotid was unaffected. The two coronary arteries of the heart were completely ossified to the extent of three inches or upwards.

From the point of origin of the arteria innominata, the aorta was considerably narrowed and became more and more so: where the ductus Botalli joins the arch, it was not above half an inch wide; and, just beyond this point, its canal was completely obliterated for half an inch in extent, by the cohesion of its parietes. The thoracic and the abdominal aorta was scarcely so large as it is usually in a child of 10 years of age.

The intercostal arteries, which were the first branches that were given off below the point of obliteration, were enlarged to the fourth of an inch in diameter, and inosculated freely with branches of the internal mammaries. It was chiefly through these arteries that the interrupted circulation of the blood had been again restored. The pulmonary arteries seemed to be somewhat dilated, although the lungs themselves were in a perfectly healthy condition.*

The case, which we have now briefly reported, has considerable resemblance to that recorded by Dr. *Graham* in the 5th volume of the *Medico-Chirurgical Transactions*, and which occurred in a youth 14 years of age, who died of the effects of pneumonia. On dissection, the heart was found to be greatly enlarged and the walls of the left ventricle excessively thickened; all the valves however were healthy. At its commencement, the aorta was considerably dilated; but below the giving off of the left carotid and the subclavian arteries it was much contracted: the contraction extended as far as the point where the *ductus Botalli* joined the aorta, where it was found to be completely obstructed for two or three lines in extent. The parietes of the aorta were neither thickened, nor in any degree altered. The circulation of the blood had been maintained by the enlarged anastomoses between the upper intercostal and the scapular and internal mammary arteries on the one hand, and the lower intercostal and the epigastric on the other. Beyond the obliterated point, the aorta resumed its normal size and diameter.

Other cases of obstruction of the aorta are on record. *Stenzel*, in his essay *De Steatomatibus in principiis Aortæ Repertis*, mentions the case of a man,

* There is a very good engraving attached to the report of the case, so that the reader may judge exactly of the situation of the obstruction and the relative changes in the size of the different arterial branches.

who, although subject to dyspnoea, asthma, and palpitations of the heart, was robust and vigorous. Yet, on dissecting the body, two large tumors were found in the arch of the aorta, the tube of which was completely obstructed in consequence. Another case is related in the second volume of *Dessault's Journal of Surgery*: in it however the obstruction, which was situated immediately beyond the arch, was not complete, although so great that a writing-quill could not be passed through it. Sir *A. Cooper* too has recorded a somewhat similar example, which occurred in a man, 57 years of age, who had for many years been subject to a cough, dyspnoea, &c. A third analogous case will be found in Professor *Otto's Neue Seltene Beobachtungen*.

A POEM ON SYPHILIS.

One of the novelties of French literature, during the last year, is a poem in two cantos on the popular subject of syphilis, by M. Barthelemy of Paris! "In the present day, when all other themes," says he, "are exhausted, none seemed altogether more virginal than the one which I have selected." The work is addressed both to savans and the people of the world. How far the literary public will approve of our author's choice remains to be seen—some indeed will be inclined to cry out on the mere inspection of the title-page, and say with *Boileau*, that "le lecteur Français veut être respecté." It is however surprising how M. *Barthelemy* has discoursed so learnedly upon the mysteries of his subject, without offending either decency or good taste: at least so says one of his compatriot reviewers—"the most strict father of a family may put this work into the hands of his son without any alarms of conscience; nay, he may even encourage him to meditate on the pictures which it presents, pictures which are at once hideous and salutary."

The poem commences with a history of the disease: the author does not pretend to decide whether it was known to the ancients, or whether it came from the new world,

———"Vengeant sur nous sa liberté mourante,
L'Amerique ait conquis l'Europe conquerante."

Whatever be its origin, it is but too true that, now, not a corner of the world is exempt from the scourge:

"Invisible et present, comme l'air qu'on respire,
Ce grand empoisonneur tient tout sous son Empire.
Nulle digue qui puisse arreter ce torrent;
Il savait, à la fois, le docte et l'ignorant,
Le riche en son hotel, le pauvre en sa cabane,
L'empie et l'homme saint qu'abrite la soutane,
Le vieillard, l'enfant meme, atteint souvent d'un mal
Dont il n'est pas lavé par le flot baptismal;
Et peut-etre aujourd'hui, parmi l'espece humaine,
Il n'est pas un seul homme, et dans l'homme une veine
Oh, quoique bien souvent encore non revelé,
Le virus destructeur ne soit inoculé." &c.

The degeneration of the present race of mankind in their thewes and sinews from their forefathers, whose armour we pigmies of the nineteenth century can scarcely lift, not to mention the numberless abortive-looking mortals we daily see, with narrow chests, pale faces, hollow eyes and deformed limbs, "qu'attend orthopædie," are all ascribed by our poetical author,

" Au germe de mort infiltré dans leur sang."

He seems to have a high opinion of the antidotal power of certain remedies; for in the second canto, which is entitled *Le Remède*, the first being entitled *Le Mal*, he tells his readers that the scientific physician can confidently predict the date of cure to his patient:

Et ce jour le malade, affranchi de souillure,
Se leve et prend son lit, comme dans l'écriture;
Miracles du savoir, si soudains et si beaux,
Qu'il semble dire aux morts: sortez de vos tombeaux!

He is a decided anti-mercurialist, and trusts exclusively to vegetable remedies.

Appended to the work are numerous scientific and well written notes from the pen of M. Girardeau de St. Gervais.—*L'Encyclographie*.

CASE OF SPONTANEOUS COMBUSTION.

Dr. *Lévin*, one of the surgeons of the French Army at Algiers, was summoned to visit a Moor that had become suddenly ill. He found his patient, a man between 40 and 50 years of age, in a state of profound coma: he was large, very fat, and bore all the traces of an habitual drunkard. He had been missed by his friends for several days, and was at length found lying in the streets in a state of intoxication. He was immediately bled from the arm and leeches very copiously, &c. Two days afterwards he was again bled; and on the fifth day he had so far recovered as to be able to go to the Mosque to return prayers for his convalescence: he returned drunk. Next day he again went out and did not return for three days. This life of inebriety had continued for a month, when Dr. *Lévin* was again called to his house. A horrible spectacle awaited him there: on the ground lay a corpse three-fourths consumed, black, carbonised and exhaling a most offensive empyreumatic smell. The limbs and a great portion of the trunk were consumed. The account which the attendants gave was, that he had been brought home, on the preceding night, drunk as usual, and was put to bed. A smell of burning being perceived in the house some time afterwards, they entered his room and found him suffering from excruciating pains; he said that he was burning all over; he drank freely of water, but found no relief. A blueish coloured flame was observed playing around his body, which exhibited in different parts some frightful wounds. The attendants left the room in horror, believing that he was a victim to some demon, in consequence of his having disobeyed the commandments of the holy Prophet.

The combustion in this case took place by the simple force of the organisation; no body in a state of ignition had been near the patient.—*Journal des Connaissances Médicales. Mai*.

OF THE PERFORATING ULCER OF THE STOMACH.

The following observations are from the pen of Professor *Rokitanski* of Vienna, where the disease must be more than usually frequent, as our author states that he has seen upwards of 100 cases.

The perforation in the stomach is in general circular and of three lines or more in diameter; the edges of the aperture are sharp and well defined, giving the appearance as if a round piece had been cut out with an instrument. As the loss of substance is always somewhat greater on the inner than on the outer

surface, the edges on the former are necessarily attenuated more and more, as they approach the aperture.

The ulcer is almost always found in the pyloric half of the stomach; in one case only the author observed it in the fundus or small cul-de-sac. Most frequently the ulcer is situated about the middle of the pyloric half, generally on its posterior wall, and always near, and often on, the small curvature. The cicatrices of former ulcers are usually observed on the inner surface of the stomach; rarely on the outer. The situation of the ulcer on this part of the organ is more remarkable, as, according to the researches of M. *Rokitanski*, *Gastromalacia*, or softening of the stomach, is always observed in its cardiac half.*

Ulcers are more rare very near to the pylorus; and the author has never seen them in any part of the intestines, except in the upper part of the duodenum; this however is of very unfrequent occurrence.

Of 79 cases, in 20 the ulcer was situated on the posterior wall of the stomach, in 15 on the small curvature, in 5 on the anterior wall, in 16 at a short distance from the pylorus, in 6 in the duodenum, and in 16 in different parts, as in the anterior and posterior walls, at the same time.†

The size of these ulcers varies from that of a *son* to that of a five-franc piece, and sometimes it is even larger. Their shape is usually circular; when large, they sometimes take an elliptical form; more rarely still they are irregular. The author is of opinion that the ulcer commences with a circumscribed softening, as an eschar, of the affected part; but the exciting cause of this local mortification he cannot explain. Let it not be supposed that the disease is inevitably progressive, until it proves fatal. The destruction of the mucous membrane, with which the disease begins, may be repaired by cicatrization: the corrosion stops in the submucous cellular tissue, which then becomes of a fibrous character, and unites firmly with the edges of the mucous membrane on the one hand, and with the muscular tissue on the other.

That the cicatrix-looking marks, which we not unfrequently observe on the inner surface of the stomach, are in truth the results of the healing of previously-existing ulcers may be fairly inferred, not only from their shape and their situation being the same, but also from the circumstance, that they are occasionally met with co-existent and side by side—not to mention the fact that those persons, in whom on dissection the cicatrices have been discovered, have always suffered, at some former period of life, from those very symptoms which are known to accompany the existence of an ulcer in the stomach.

When the ulcer does not cicatrise, it extends deeper and deeper, until at length it reaches the peritoneal coat of the stomach, and perhaps eats through this obstruction. If no adhesion has taken place at this point between the stomach and one of the adjacent viscera, the contents of the former escape into the cavity of the abdomen, and inevitably induce a fatal peritonitis. Occasionally indeed the ulceration extends to the substance of the adherent viscus: in this way the author has seen the diaphragm in one case perforated, and in another the base of the lung corroded. A hæmorrhage may thus be unexpectedly induced, which may suddenly occasion the death of the patient.

* An account of this disease will be found in a preceding article, taken from one of the German Journals, in a former part of the present Number.

† In 12 cases there were two, in 4 there were three, and in one there were as many as five ulcers at the same time. When there is a plurality of ulcers, they are usually situated, one above the other, on the posterior wall or at the small curvature of the stomach: it is rare to find one at the anterior, and another at the posterior wall—this was observed four times only out of seventeen cases. In one case there were two ulcers in the duodenum, the one situated immediately opposite to the other; and in another case there was one ulcer in the duodenum and another in the stomach close to the pylorus.

With respect to the *symptoms* of ulcer of the stomach, Dr. Rokitski describes three stages of the disease. The *first* is characterised by some form or another of that most Protean malady, dyspepsia, with which the patient may have been afflicted for several years. Increase of gastric pain and distress after food, accompanied with more or less frequent vomiting, is the leading symptom of the *second* stage; while the *third* is characterised by the sudden accession of peritonitic symptoms, induced by the escape of the contents of the stomach into the abdominal cavity. Such an attack may excite the suspicion of poisoning having taken place. Cruveilhier has said that the perforation may suddenly take place during a bodily exertion: this may be so. When the opening is plugged up by some adjacent viscus, we cannot, as a matter of course, determine the moment it occurs; but we may suspect it by the invasion of distressing cardialgia, lasting perhaps unabated for several days and accompanied with swooning, vomiting of blood, &c. The hæmorrhage, as we have already stated, may prove fatal at the time; in other cases it returns on several occasions. The disease may therefore be said to terminate in one of two ways—either by peritonitis or by hæmorrhage. It rarely becomes chronic, and exhausts the patient by mere debility: occasionally indeed before death dysentery supervenes.

In spite however of the very unfavourable prognosis in every case of ulcer of the stomach, it is most certain that a cure not unfrequently takes place—attested, as we have already stated, by the discovery of circular cicatrices on the internal surface of the stomach in persons who had previously suffered from all the symptoms of the first and second stages of the disease. The disposition to relapse in such cases is very remarkable: this is proved by the presence of one or of several of these cicatrices situated near to, or at, the side of the ulcer. Even when the cicatrization is complete, the patient usually continues for a greater or shorter length of time subject to dyspeptic sufferings.

As to the *etiology* of the disease, the author says that he has seen it accompanied with irregular hæmorrhoids, with dysmenorrhœa, gout, &c.;—but he has never observed any distinct *rapport* between these maladies. He is, however, of opinion, that all those diseases which induce repeated irritation of the gastric mucous membrane, and at length occasion an hypertrophe and an increase of the secretion from this membrane, not unfrequently terminate by the formation of an ulcer. Intermittent fevers, when they are accompanied with stomach complaints, have a great influence on the production of this disease. With respect to the sex and age at which the disease is most common, we may state that, out of 79 cases, 46 occurred in females, and 33 in males.

Amongst the *former*, 18 were above 50 years of age, and 15 were under 30; of these last there were three whose respective ages were 16, 17, and 19. Among the *latter*, 12 were above 50 years, and six were under 30.

The phenomena, which we have described as usually present in the perforating ulcer of the stomach, are observed in cancerous disease of this organ also; and hence it is not unfrequent that physicians confound the two maladies together. What adds to the difficulty of the diagnosis is, that they are sometimes associated together in one case. This is the more distressing, as it scarcely leaves a hope for expectation of good from any system of treatment; whereas, in the uncomplicated form of the perforating ulcer, a cure is not unfrequently effected in its early stage by appropriate and perseveringly used remedies.

Our author mentions, as among the best discriminating symptoms of these two kinds of gastric disease, the absence in the latter of those phenomena which indicate a thickening of the pyloric parietes and a contraction of its canal—such as vomiting two or three hours after taking food, the dilatation of the stomach and its cul-de-sac, and, lastly, the presence of a fixed resisting tumor in the region of the pylorus. The vomiting of chocolate-looking matters is more common in the cancerous than in the perforating ulcer of the stomach: in the former disease too, we not unfrequently perceive among the rejected contents

of the stomach portions of the cancerous tumor; whereas, in the latter, the vomited matters are mixed with blackish-brown flocculi; hæmorrhage, also, and occasional intermissions of suffering are certainly more frequently observed in this than in the other case; and, moreover, the perforating ulcer is often met with in young persons, whereas cancer is a disease usually of more advanced life.

Lastly, the absence of all the marks of a cancerous cachexia are to be taken into account in forming our diagnosis.

As to the treatment of the perforating ulcer of the stomach, Dr. *Rokitanski* very properly says, that more may be done by an appropriate diet than by any particular course of medicine. Milk is, on the whole, the best food; a small quantity should be taken every three or four hours. Magnesia, prepared chalk, lime water, &c. are often useful at times, and may be added to the milk.

When this does not suit the stomach, we should try weak broths, mucilaginous decoctions, panadas, and such like articles. The occasional application of leeches, and of some epispastic, such as the strong antimonial ointment, on the epigastric region is useful: also tisanes of chamomile, mint; and, if hæmorrhage should ensue, acids, alum, acetate of lead, kino, rhatany, &c. We should never have much confidence in any amendment, which occurs suddenly; in all probability it will be of but short duration.—*Oesterr. Med. Jahrbucher*, 1839.

REDUCTION OF AN ALLEGED DISLOCATION OF THE SECOND CERVICAL VERTEBRA.

M. *Guerin*, the celebrated orthopædic surgeon of Paris, has recently published the following case in the *Gazette Médicale*.

A young girl fell on the pavement and struck her chin severely: next day she felt considerable pain in the neck, and the head was observed to be inclined to the left side, while the face was turned to the right. This deformity became gradually greater for several successive days.

Various attempts were made at the time to rectify the displacement, but without avail. Five months afterwards, she was examined by MM. *Sauzon*, *Marjolin*, and *Bowvier*, the first of whom was of opinion, that there might be an incomplete luxation of the superior cervical vertebræ, while the two latter surgeons declared most distinctly that the second cervical vertebra was luxated, and that all attempts at reduction must be abandoned.

Five weeks subsequently M. *Guerin* saw the patient, and gave it as his opinion that a gradual reduction of the luxation might be tried without danger, and with some prospect of success.

The following was the state of the case at this period: the head was inclined to the left side, and rotated to the right; the spinal column was inclined in a direction contrary to that of the head: there was a projection of the transverse process of the axis at the right side of the neck, above and behind, with a well-marked depression at the opposite side.

According to M. *Guerin*'s views of the case, the dislocation of the second cervical vertebra had probably followed elongation of the ligaments and laceration of the articular surfaces, being ultimately effected by spasmodic contraction of the muscles of the neck. It seemed therefore rational, he thought, to conclude that the vertebra might be restored to its natural position by placing the head and vertebral column in such conditions as would allow the opposite muscles to act with effect, and gradually overcome the forces which had produced and still kept up the displacement. To diminish the spasmodic contraction of the

muscles, frictions with tartar-emetic ointment, and extension along with percussion and kneading of the muscles, were assiduously employed.

After a few days, the inclination of the head was diminished by three-fourths, although the deviation of the transverse process remained the same. To rectify the dislocation of the vertebra was now to be attempted, and the following was the plan which M. *Guerin* adopted :—

The shoulders being immovably fixed in the horizontal position, extension was employed with both hands to the middle and most prominent part of the neck; the parts being drawn horizontally, and from right to left, while an assistant endeavoured to rotate the head from right to left at the same time. The effect of these exertions was visibly to diminish the projection of the transverse process of the axis.

The same attempts were therefore repeated thrice a day; and during the intervals, the patient was placed on the mechanical bed which M. *Guerin* employs in the treatment of wry-neck. At the expiration of eight days, the axis could be restored completely to its normal position: but it did not retain it; for, as soon as the muscles were allowed to act, they drew the transverse process backwards, but in a less marked degree than before.

This circumstance, which depended on fracture of the left articular process, and on considerable elongation of the ligaments and articular capsule, gave an excellent idea of the mechanism, by which the dislocation had been produced in the first instance. To remedy the tendency to recurrence of the dislocation, the bandage, used by M. *Guerin* in cases of wry-neck, was applied; and in three months the patient was pronounced to be perfectly cured.

(*Remark*).—We are by no means satisfied that there was so serious an accident as luxation, even incomplete, of the second cervical vertebra in this case. We are indebted for the report to a Number of the recently started "*Provincial Medical and Surgical Journal*," edited by Drs. *Green* and *Streeter*, to which we wish all possible success.—(*Rev*).

NEW METHOD FOR THE RADICAL CURE OF HERNIÆ.

M. *Velpeau*, the ever active surgeon of La Charité Hospital, alludes to his new proposal in the following terms. :—

..... Among the methods employed in former times for the cure of herniæ, there is one, that of scarifications, which has appeared to me, when somewhat modified, capable of effecting the end with safety and success. The old plan consisted in opening the sac and scarifying it in several places. Modern surgeons have rejected it as both dangerous and useless. Dangerous I admit it to be; but I cannot go so far as to say that it is useless. It is well known that if the peritoneum is scarified, there is induced a secretion of plastic lymph which will determine the adherence of the parietes of the canal. Since M. *Guerin* has shewn that subcutaneous incisions may be made in a great variety of structures without the danger of inducing any suppurative action or any serious inflammation, provided the external air be not admitted into the *trajet* of the wound, it occurred to me that the principle might be extended to the radical cure of reducible herniæ. In one case you have seen me put my proposed plan in practice. After separating and keeping to one side the spermatic cord and vessels, I slipped a small knife under the skin and endeavoured to insert it as far up as the internal orifice of the inguinal canal. My object was to penetrate into the peritoneum, in order to close the herniary sac at its commencement. Having pushed the instrument to a sufficient depth, I then moved it about so as to scarify the inner surface of the sac in all directions. The wound in the skin was

scarcely a line in extent; not more than two or three drops of blood escaped; and the patient did not complain of any pain. No unpleasant consequences followed the operation; but we are not informed as to the eventual results of it.—*L'Esculape*.

Remark.—The plan of subcutaneous incisions in various surgical maladies, as recommended by M. *Guérin*, is certainly well deserving of the attention of surgeons. There seems to be no danger accompanying the operation, even when important tissues, such as the capsular ligaments of joints, are divided—provided the external wound be very small, and the air be prevented from entering. Already we observe that some English surgeons have adopted the practice of dividing the contracted muscles in certain cases of spinal deformity, and apparently with decided success.—(*Rev.*)

ON HOSPITAL GANGRENE IN PARIS.

The following letter was recently addressed to the editor of the *Bulletin de Therapeutique* by M. *Devergie*, one of the medical officers of St. Louis hospital.

Hospital gangrene has attacked not only some of the patients of M. *Jobert*, but also two of the cases in my wards. In one, that of a scrofulous patient affected with swelling of the inguinal glands and numerous abscesses, the application of cinchona and charcoal powder, equal parts, moistened with lemon-juice, succeeded in stopping the disease. The other case was much more severe. There was a leprous ulceration of the upper half of the left cheek, and lower eyelid, extending to part of the forehead and of the right cheek also. The application of the *Canquoin* caustic had the effect of destroying the indurations of the right cheek; but neither this, nor the iodine ointment, the chloruret of sodium, nor various other remedies, did any good to the disease on the left side. In a short time, the wounds inflamed, their surfaces assumed a yellowish-grey hue, the suppuration became copious, and ulcerous pustules formed on the neck and behind the ear. The ulcerations on the face gradually coalesced, until the entire cheek formed one large wound. In vain I applied *Dupuytren's* favorite remedy, the bark and charcoal powder mixed with lemon juice; but fortunately under the use of the acid nitrate of mercury,* diluted with an equal weight of water, the mischief was arrested; in six days, the lupus was destroyed, and the wounds cicatrised with surprising rapidity, so that a perfect cure was effected, with the exception of an ectropion of the left eyelid remaining.

M. *Devergie* is of opinion that the cause of the hospital gangrene in the St. Louis hospital is its exposure to the unhealthy emanations from *Mont-faucon*, (where there is a large *abattoir*, or slaughtering-house, and where there is often collected an immense accumulation of most offensive animal refuse), as the patients in those wards, which were on the other side of the building, seemed to be quite exempt from it.

* We presume that this is a solution of the nitrate in nitric acid.—(*Rev.*)

Clinical Review.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.

REPORT ON THE RESULT OF THE OPERATIONS FOR THE CURE OF SQUINTING, PERFORMED AT THE ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, between the 18th April, and 30th October, 1840. By CHARLES W. G. GUTHRIE, Jun. Assistant-Surgeon to the Hospital, &c. &c.

In our last Number, we noticed the interesting Report on the Operation for Squinting, by Mr. Charles Guthrie, jun. The present is a pendant to that; and, independently of containing the results of former operations, it adds some new facts, both curious and important, to the stock. We shall notice the principal points.

1. *Safety and Success of the Operation.*

"Near seven months have elapsed since it was first introduced into the Hospital and into this country, since which time I have done 340 operations for internal, or converging squinting, and 16 for external or diverging squinting. In no case has any inflammation of the ball of the eye followed the operation, neither has inflammation of any other part ensued, requiring further treatment than the application of a bandage and cold water for the first twenty-four hours. In by far the greater number of cases the eye has been exposed the morning following the operation, a dose of aperient medicine has often been omitted, poor patients have frequently gone to their work the next day, and in no one case has the slightest bad consequence followed this operation. The success has been, in cases of internal squinting, complete, and although some few have given much trouble, I have I believe arrived at that point which permits my venturing to say, that I have met with no case which is not curable; and that although in two or perhaps three cases the cure has not been as perfect as I could desire, it has been because the patients have hesitated in complying with my wishes."

2. *What is to be done if the Eye resumes its Cast.*

"When in internal squinting the operation does not perfectly succeed, the eye is sometimes perceived to resume a little of its original cast, or squint, from the eighth to the fourteenth day, or about the time, I conceive, at which the muscle becomes re-united to the ball of the eye, or to some part within the orbit, and considerable anxiety is felt by both surgeon and patient at its occurrence. It does not however follow, that the operation will not eventually succeed, and the eye be restored to its proper place by the efforts of nature alone. I have seen it do so several times, nevertheless I do not now trust to the unassisted efforts of nature when I perceive the slightest turn beginning, but direct the other eye to be padded, or kept closed, so that its vision may be from time to time effectually prevented, and the patient to use, or to try to use the remaining muscles. I do this, I believe with success, even when the eye has a turn in the opposite direction after the operation, relying on the efforts Nature will make to bring the axis of the single eye actually in use, (whether the other is covered or not,) into its proper place, even although one of the muscles, usually supposed to effect this object should have been divided; and this education of the eye is of great service, even where the padding or closing of the other is omitted.

In some obstinate cases of long standing, the eye, almost immediately after the division of the muscle, returns to nearly its pristine state of obliquity, and although the division and separation of the muscle and its attachment in every direction, in the manner I have especially indicated, until the outer or sclerotic coat is fully exposed to a considerable extent, enables us to succeed, in most instances, in effecting the object in view, it does not always do so; and in a few cases I have been obliged to desist without bringing the eye to an exact central position; or I have found it a little turned inwards on the next or some other succeeding morning. The remedy for this evil, and which generally succeeds, is to exercise the eye in a regular manner, of which Charles Marten, 18, Lisle Street, is an excellent example, and in such cases the eyes will usually be found to be naturally convergent. It may occur when the incision in the conjunctival membrane unites in the first instance by adhesion, which it will do in some cases when it is small, and the eye by turning at all towards its former oblique state, facilitates the process. I suspect also that the ball of the eye rests in its peculiar bed of fat and membrane, like a cast in a mould; and that when the eye is liberated from its squinting state, it does not remain in its new and partially unsupported position, but gradually falls back into the mould of fat and membrane originally formed around it. I am led to apprehend that the conjunctival membrane materially assists from its general attachment to the eyelids, in maintaining the eye in its old position, from which it is, however, gradually drawn in these cases by the efforts of nature assisted by art."

3. *When the Operation is followed by Squinting of the other Eye.*

"When one eye has been operated on, and restored to its proper state, and the patient is sensible he can turn it in every direction, and has so far recovered his sight as to make use of it, the other with which he knew he had an occasional cast, sometimes begins to squint more frequently, and this may become a permanent defect. In such cases, and I have alluded to them in the last edition, p. 4, there can be no hesitation about the propriety of operating on the second eye, and which succeeds in restoring both to their proper situation.

Whenever I can perceive this state to exist to an extent which I am satisfied from experience, is not likely to be removed by any management of the eyes after one operation, I recommend the patient to have them both done at once, or with only the interval of a day, so that the education required for both in seeing in a new way may go on simultaneously; and which I have found to be of great advantage in many instances."

4. *When the Patient Squints with both Eyes.*

"In some rarer cases it will be found that the patient squints with both eyes, although he is only aware that he does so with one; and neither he nor his friends will believe it; and I now apprehend that these are the cases in which, when the operation does not fully succeed at once, it has been often thought necessary to divide, or attempt to divide, other muscles than the one originally intended to be operated on; whilst the incisions into the orbit and through the conjunctival membrane are unnecessarily prolonged, giving rise perhaps to those great protrusions of the eyeball, or to the loss even of eyes, both of which evils, it has been stated, have followed these operations, but which ought never to occur, and which I hope these observations will in future prevent. It is a difficult thing to persuade, much more to convince a person that he squints with both eyes, when he cannot see it himself, nor any of his friends can see him do it, although the defect in one eye is apparent to every body. Under these circumstances he submits to an operation on the eye he knows to be affected, which is easily done: but when the surgeon examines it carefully after the operation is over, and the patient tries to use it, he finds that he can still turn it inwards, and the operator sometimes thinks it necessary to cut in various directions until

the eye is sufficiently loosened in the orbit to lie in the desired position. A more cautious operator is contented to have removed the greater part of the evil, trusting to the management of the eye afterwards for its complete recovery. This was my practice, and although I succeeded in many instances, still I have found among the cases of 30, 40, and 50 years' standing, some that I could not entirely overcome. These persons have presented themselves, for the most part during the last two months, the more elderly people having begun to think that they might as well avail themselves of the advantages the operation afforded; and in the instances alluded to the patients all persisted that they squinted only with one eye, and which they readily submitted to operation; but when told they must have the other done, they as manfully resisted.

In my last, or fourth edition, I alluded to this, as I have before remarked, but I did not like to express myself more fully on the practical point, until, from repeated observations, I was quite satisfied of the fact I intended to inculcate. In such a case, that is when the eye still turns in after the operation, and I am satisfied I have done all that ought to be done, I do not persist in trying to do more, but at once operate on the other eye, whether it apparently stands in need of it or not; and I ascertain the fact of the necessity in the following manner, if it had not been done before. The bleeding if any having ceased, I desire the patient to look me steadily in the face with the eye which has just been operated on, whilst I keep the other closed. When this has been done for a few seconds, I gradually raise the lid of the supposed sound eye, and in every instance of the kind, have found it turned inwards, so much so as to cause the greatest surprise to the friends of the patient, or other bystanders, and, through their observations, as well as my own, the person at last submits to have the operation done on that eye also. It is much better they should be done at the same time, when both eyes immediately become straight, but this does not always follow so instantaneously if there is a long interval between the operations, and the first eye may require some education afterwards. But I believe that, with this improvement, the cure of an internal squint may always be accomplished."

5. *When a Patient fancies that he Squints.*

"The imagination has exercised its usual activity even in this complaint, and persons have been found who were so perfectly satisfied they squinted badly, that they earnestly desired to have an operation performed, although the obliquity was scarcely discernible. In such cases, and indeed in those in which the second eye is operated upon, when the persons were unconscious they had any deformity, I merely divide the tendon without any of its lateral attachment; thus weakening rather than destroying its power."

6. *External Squinting.*

"The operation for the division of the external rectus or straight muscle is as easily done as that for the internal one; but the result in external squinting is not always so satisfactory. It has been said that this operation does not succeed; that, strictly speaking, none have been successful, although all the cases operated upon have been improved in a trifling degree; in fact, that they only squinted a little less than before. This, and all the other observations I am acquainted with, are on many points erroneous, although in some few they may be correct.

I have however met with four cases in which this happy result did not follow to the same extent. In the first, I operated on the right eye, and brought it to the centre, but it never would turn in, the internal straight muscle seemed to have no power over it, and as the man thought himself very much improved, and did not wish anything more to be done, he absented himself from the hospital, and I have not been able to find him. The second was a perfectly similar

case—the third I have under treatment, and think I shall cure—the fourth had both eyes operated upon in the country for internal squinting by the division of the internal straight muscles, and the consequence was that both eyes turned outwards. The surgeon then divided the two external straight muscles, but the eyes again turned outwards, causing two very disagreeable casts at the same time. I have redivided these external muscles further back than before, and the right eye is cured, the left is nearly so, although a trifling cast, compared with what it was before, remains, but the ultimate result of further time and treatment are however to be ascertained. The next case I shall adduce is perhaps the most extraordinary, and will give the most satisfaction of any I suspect that have yet been reported.

Thomas Williams, aged 17, of No. 15, Crown Street, Westminster, applied on the 24th August with an internal squint of the right eye, which was operated on the same day in the usual manner, without any thing remarkable being perceived. The next day it appeared rather more out than in, and this gradually increased, so that, although he could frequently look very naturally with it, and particularly when he made an effort to do so, it was evident that it turned a very little outwards when perfectly quiescent. On trying the other eye, which he declared to be perfectly sound, in the manner I have directed to be done to ascertain its state, when the eye which has been operated upon is intently fixed on the face of the experimentalist, I found to my surprise that it was on every trial directed outwards. I informed him that the only way to make the right eye quite straight, and to turn in, was by dividing the external straight muscle of the left or sound eye. To this he demurred for some time, but at last consented, on the 28th of October, and I cannot express the pleasure I felt on finding, after the operation, that the train of reasoning which induced me to do this operation was crowned by success."

We are all very much indebted to Mr. Charles Guthrie.

GUY'S HOSPITAL.

GUY'S HOSPITAL REPORTS, No. XI. Edited by GEORGE H. BARLOW, M.A. and L.M. Trinity College, Cambridge; and JAMES P. BABINGTON, M.A. Trinity College, Cambridge, Member of the Royal College of Surgeons.

THE present Number of these valuable Reports presents us with the following Papers:—

Remarks on the Report of Syphilitic Cases (continued); by C. Aston Key. On the Treatment of Incipient Phthisis; by H. Marshall Hughes. On Disorders which are Variable, and on the Practical Inferences which are deducible from the Character of Changeableness; by T. Wilkinson King. On the Episternal Bones occasionally found in Man; by T. Wilkinson King. On some Supplementary Muscles of the Anus, described by Dr. Horner of Philadelphia; by T. Wilkinson King. Case of Transposition of the Aorta, Trachea, and Oesophagus, Tuberculated Liver, and Scirrhus-Cancer of the Rectum; by Henry Ewen.—Communicated by C. Aston Key. On the Forms of the Cartilages which keep open the principal Divisions of the Bronchial Tubes; by Jonas King. Case of Urinary Calculi, formed on a piece of Straw; by Henry Norris.—Communicated by Sir Astley Cooper, Bart. On the History of a Supposed Hermaphrodite; by Robert Merry.—Its Dissection by Sir Astley Cooper, Bart. Practical Hints on the Treatment of Stricture of the Urethra; by Bransby B. Cooper, F.R.S. Operation for the Radical Cure of a Reducible Inguinal Hernia; by Bransby B. Cooper, F.R.S. Case of Cerebral Disturbance, dependent upon Disease of the Pericardium; by Dr. Yonge.—Communicated by Dr. Bright. Observations on Diabetes: with Cases illustrative of the Efficacy of Ammonia

in the Treatment of that Disease; by George Barlow, M.A. & L.M. Observations on Abdominal Tumors and Intumescence; illustrated by Cases of Diseased Liver; by R. Bright, M.D. F.R.S.

As we believe our readers prefer the practical to the rare, the useful to the curious, we shall pick out the papers of the former class for notice first, and allude to the remainder afterwards. We shall commence with our able and excellent friend, Mr. Bransby Cooper.

PRACTICAL HINTS ON THE TREATMENT OF STRICTURE OF THE URETHRA;
BY BRANSBY COOPER, F.R.S.

Mr. Cooper has already communicated one Paper on this subject to the Profession, a paper which we noticed at the time. The present is a continuation of *that*. An object of both has been to deprecate the employment of force in the introduction of instruments. In the paper before us, Mr. Cooper enters more into detail on the means of treatment than he had previously done.

"On first examining," says Mr. C. "a stricture, either a silver catheter or a bougie may be used for the purpose of ascertaining its seat and condition. No. 6 is the best-sized instrument for this object: it is nearly of the size of the urethra, and is much less likely than a smaller one to get entangled in the lacunæ of the canal. When the instrument is first passed down to the stricture, gentle pressure should be exercised, and, if its passage be resisted, should be continued for a few minutes. If the obstruction be owing to muscular spasm, continued pressure of three or four minutes will be sufficient to overcome the contraction: if after that time, however, the obstacle does not yield, its persistence evidently depends upon the density of an adventitious deposition. Where, in such a case, no great pain is experienced by the degree of pressure hitherto employed, and no bleeding occurs, force may be used, to the full extent considered safe by the surgeon: but if this is still ineffectual, no further mechanical means should be had recourse to (unless the bladder be much distended, and the symptoms of retention urgent), but leeches to the perinæum and a purgative draught should be prescribed. It generally happens, in cases of no very long standing: that great benefit is at once derived from this treatment; and I have frequently seen the patient recover after it has been adopted for three or four alternate days; but in cases of older date, great difficulty of micturition is often found to remain, in spite of it. To combat this symptom, the application of the bougie should be continued; as it is now ascertained that the difficulty of directing the instrument into the bladder depends upon the density of the stricture, and not upon muscular contraction. A new indication now therefore presents itself, viz. the removal of the adventitious matter: this is most readily effected, by maintaining an equable degree of force upon the surface of the stricture, which induces inflammation and softening-down of the newly-formed substance. In the course of a few days, suppuration will be found to have been set up; after which, five or six repetitions of the application of the instrument will be sufficient to effect its passage through the obstruction; and thus will be performed a cure of stricture in what I may term its second stage.

It is in this second stage that the precaution which I have alluded to above is necessary; for it is requisite to be as cautious with respect to the precise direction given to the instrument when thus gently applied, as when force is used to push the catheter or sound into the bladder; inasmuch as, without proper attention to the direction of the instrument, a false passage is as likely to be produced in the one case as in the other. This I shall shortly be able to shew, by relating cases in point. If gentle pressure be repeatedly made against the side of the urethra, instead of upon the stricture itself, the mucous membrane naturally yields to the continued application of the instrument; and a new pas-

sage is gradually produced, which by violence is frequently effected at once. When an opening has thus been formed in the urethra, it is not a necessary consequence that any train of symptoms should at once point out the error which has been committed. On the contrary, from the comparative facility with which the instrument passes onwards towards the bladder, the surgeon fancies, at first, that he has overcome the true source of obstruction, and indeed frequently succeeds in reaching the bladder with his instrument, having pushed it again into the urethra, or through the prostate gland: a flow of urine then ensues, which gives him reason to suppose that the cure is complete. On the other hand, however, the urine is sometimes extravasated, as soon as the false passage has been made; an abscess is formed in the perinæum; and all the symptoms follow inseparable from such a state of things, requiring at once the laying open of the perinæum, and the evacuation of the extravasated urine; and leading to the abandonment of the gentle mode of treatment, for the cutting through of the permanent stricture,—an operation which I have before described."

Perhaps it is going rather far to say, that no force and force are equally likely to occasion a false passage. On the *gutta cavat lapidem* principle, the frequent mal-application of a catheter, with gentleness, may send it out of its track, yet still we should doubt its doing so as frequently as the violent employment of the instrument.

Mr. Cooper's opinions are necessarily possessed of weight, and ought to influence the surgical world. Yet as sentiments and practice differ, we are ourselves disposed to give the preference to another method. If a patient presents himself with stricture, we ascertain, as well as may be, the dimensions of his stream of urine, if he makes one. And we take an instrument, a gum or a metallic catheter or bougie, about that size, or rather smaller, and attempt its introduction, generally with success. If the water only dribbles and the stricture is a bad one, we must say that we are advocates for beginning with the cat-gut or the wax bougies of the smallest size. In many instances, to say the least, this may be introduced, and if it is, the rest is but a matter of time. If it cannot be got in, the gum or silver catheter is in reserve. Should that be small or large? Our predilections are for the small. The metallic one should be employed with delicacy and with address, no doubt, and force is seldom justifiable. But, so far as we have seen or can determine, the small instrument, gently used, is safe and serviceable, more so, indeed, than the large.

Mr. Cooper admits, what we fear is too true, the frequency of false passages. If our own experience is to be trusted, violence has, in almost all instances, been father to them. Mr. Cooper remarks:—

"In cases where a lengthened false passage has been made into the bladder, and where no extravasation of urine has followed, it becomes very difficult for the surgeon to ascertain, with certainty, that the fistulous passage exists: and I believe that this can only be done by those who are in the habit of frequently passing instruments into the bladder. As, however, such passages are frequently made in the upper region of the urethra, their false course may be ascertained from the fact, that a straighter instrument than the one usually employed will pass through them with facility; and that when in the bladder, the instrument wants the freedom of motion exhibited by the catheter, which has been passed through the urethra only. If the false passage has been made in the lower part of the urethra, the instrument will be found to move in the segment of a larger circle than usual; and its escape from the urethra can always be ascertained by passing the finger into the rectum. False passages of the lower region are generally the result of the forcible use of the instrument for strictures in or near the bulb; while those of the upper part are a consequence of the continued pressure made upon the obstruction, with the penis drawn forward to fix the point of opposition. In both of these cases, although the

patient, from the absence at first of any difficulty in emptying his bladder, may imagine himself permanently relieved, he is doomed to be very quickly disappointed: should the surgeon allow only a few days to elapse without passing the instrument, the obstruction to its progress, and the difficulty in voiding the urine, recurs; for the new canal is incapable of remaining many days pervious, without the frequent passage of the catheter; unless, indeed, a mucous lining membrane is formed within it; to produce which, a considerable length of time is necessary. A case of this kind occurred to me; in which, after having passed the instrument for several weeks, in the belief that I had re-established the natural canal, it at length, on a sudden, took a new course into the bladder; and this proved to be through the natural urethra. Probably this took place from the stricture having been spontaneously cured by the removal of the irritation from the urine, which for some time previously had passed through the new canal. The patient subsequently suffered no inconvenience from the false passage which had been made; nor had I ever, after the discovery, any difficulty in passing the instrument into the bladder through the natural canal. I cite this case, not because I believe it to be of rare occurrence, but merely because the discovery of it is uncommon. I think, indeed, these false passages to be so frequent, as to be present in most of those cases where difficulty of passage continues whilst the patient is under treatment: at all events, post-mortem examinations of the urethra, in cases of stricture, shew that these deviations from its natural course are extremely common."

When we have had reason to suspect the existence of false passage, (and a good anatomist can scarcely fail to *suspect* it sooner or later, if there is one) we have seized the opportunity (if it offered) of an instrument reaching the bladder by the true one, and confined the patient to bed, with the instrument tied in. So soon as it is loose and suppuration is freely established, a larger one may be substituted for it, and by this means the proper canal of the urethra may be dilated with rapidity. Elastic catheters answer best. It is a common practice and we merely mention it in connexion with this particular case.

Caustic.—"In cases of stricture which resist the application of the common bougie or catheter,—for sometimes, owing to the great density of the adventitious substance, these instruments will not succeed in causing the latter to soften down, even though they may be used for several days or even weeks in succession,—in such cases, the caustic bougie must be had recourse to; not merely as an escharotic, to decompose the part, but that it may, by its peculiar action, induce inflammation, softening down, and suppuration. A successful result generally follows a few applications of this instrument: and although in some cases it may be delayed, I have never seen it fail to produce, sooner or later, a beneficial effect. There are occasions in which its efficacy is exhibited with singular rapidity. For instance, in a case of obstinate permanent stricture, for which I had been for several weeks attempting to pass instruments without success, I at last easily succeeded in introducing a catheter into the bladder, after passing eight times only the caustic bougie; and the patient ultimately recovered and has never had any recurrence of the disease.

The caustic bougie is also of the greatest benefit in irritable stricture, which is always attended with bleeding on the gentlest application of the instrument, and with frequent sudden spasms, occurring without any apparent cause, beyond slight exposure to cold and damp, or some excess in the use of wine or spirits, and which render micturition difficult. I need scarcely observe, that the cautions I have described above, as to the precise application of instruments to the stricture itself, are most especially to be observed in making use of the caustic bougie; or that a false passage is very likely to be produced, if it be made to press and act on the urethra itself, instead of on the adventitious matter."

Mr. Cooper relates three cases in illustration of the preceding observations,

and of the benefits derived from the use of the caustic bougie. They do not appear to us, we must confess, conclusive, and, having at one time, seen a good deal of the application of caustic to strictures, our opinions of it are not quite so favourable as Mr. Cooper's. These are points, however, on which, perhaps, surgeons will never be perfectly unanimous.

Mr. Cooper relates several cases in which the operation of cutting through the stricture was performed. They ended very satisfactorily.

The profession ought to feel indebted to Mr. Cooper for these useful communications.

ON THE TREATMENT OF INCIPIENT PHTHISIS. By H. MARSHALL
HUGHES, M.D.

Dr. Hughes remarks that, from the pathological investigations of Laennec and others, it has, of late years, been considered possible that tubercular cavities, after collapse and contraction, may become effaced by the adhesion of their parietes; or that, from their limited extent and inactivity, they may cease to be a source of danger, or even of inconvenience; and therefore, that if tubercles exist not in other parts of the lungs, the cure of advanced phthisis may be spontaneously effected. The morbid anatomy of the parts upon which this opinion has been founded, may, in some instances, have been investigated with too little care, and the supposed facts may have been received upon insufficient evidence; but that tubercular cavities may contract, collapse, and become inactive and innocuous, is a belief too securely based, and too strongly supported, to be materially affected by the doubts expressed in the recent work of M. Fournet. The cure, however, of phthisis, in its advanced stage is, at all events, extremely rare, and the influence of art on it erratic and indeterminate.

But though, continues Dr. Hughes, when tubercles are numerous or softened, or when large excavations exist in the lungs, we yet need remedies to stop the progress of the disease, there appears to be no sufficient reason for believing that scrofulous matter may not be absorbed, or so altered as to cease to be a source of irritation in the lungs, as well as in other parts of the body, as the glands of the neck or mesentery; and therefore that phthisis, in its early stages may not be cured, or at least indefinitely suspended. That, by the early adoption of general as well as local treatment—of hygienic combined with medical means—the incipient disease may be subdued, and that the further deposition of tubercles may be prevented, is an opinion which is now general, and rapidly increasing.

Dr. Hughes, after adverting to Sir James Clarke's excellent treatise on consumption, and to Dr. Carswell's views of the nature of tubercle, thus professes his own creed:—

"Tubercular phthisis, then, I believe to be a constitutional affection, either hereditary or acquired, in which an unorganizable matter is eliminated from the blood in a fluid state, together with the natural secretions of the parts affected. I suppose that this matter becomes at length solid, by the absorption of its fluid constituents, and either remains upon, or is more or less quickly removed from the surfaces on which it is deposited, according to the entire want or to the freedom of communication of those surfaces with the natural outlets of the body;—that its principal seat is the free surface of the mucous and serous membranes;—and that its most frequent locality, when affecting the lungs, though occasionally infiltrated through all the tissues of the organ, is the mucous membrane of the air-cells and smaller bronchial tubes. I moreover believe that this deposit or secretion, though it not unfrequently occurs without any decided or observable increased action of the vessels of the lungs, and is therefore not at first characterized by any marked thoracic symptoms, is, when the

predisposition already exists, often induced, promoted, and increased by bronchitis, and other inflammatory affections of the tissues, by the vessels of which it is secreted."

Dr. Hughes does not so much allude to the management of the constitutional affection, but rather confines himself to the treatment of the pulmonary disease. He first alludes to the principal remedies he has employed.

1. *Emetics*.—At first Dr. Hughes prescribed them only in advanced phthisis—latterly in the incipient. He has tried many and various forms. The following are the results of his experiments.

"I believe that either the simple sulphate of zinc, or ipecacuanha, in doses of twelve grains, or a combination of six grains of ipecacuanha and two of sulphate of copper, are the most desirable forms and proportions that I have used. Smaller quantities have occasionally failed. Under these circumstances, nausea, but no vomiting, and on one or two occasions diarrhoea, have been induced by the medicine. The emetics have been directed to be taken in a few ounces of warm water, about an hour before breakfast, every morning; or every second, third, or fourth day, according to the strength of the patient and the character of the disease. Their uniform effect, with I believe a solitary exception, has been very materially to relieve, and, in not a few instances, entirely to remove the cough. On several occasions, when they have not been taken every day, patients have been requested to observe whether their cough was better on those days in the morning of which they took the emetic. The answer has generally been decidedly in the affirmative; but it has certainly sometimes been, that though the cough was much lessened, it was not especially so on any particular days. But the decrease or cessation of the cough has been far from the only benefit derived from the use of emetics. Their effect in relieving dyspnoea, oppression of the chest, and load at the scrobiculus cordis, has been often surprising to the patient as well as the physician. The appetite has often improved under their use, and the whole system has appeared invigorated. Only a few days since, a patient said: 'ever since I began to take the powders, my appetite, which before was bad, has been ravenous.' Their effect, also, upon the expectoration has been very marked but various. In some cases, when previously profuse, it has been checked, and in others stopped; and while some patients have observed 'they brought up the phlegm more easily,' others, whose cough had before been dry, have experienced ease from the excited secretion of the bronchial membrane. It must however be confessed, that some have complained of the continuance of languor and nausea for a considerable part of the day, and of the exhaustion which they have temporarily endured. But even in these cases I have never yet known any permanently injurious consequences result from their frequent employment."

He admits that discrimination should be used in selecting the cases for their exhibition. As a general rule, the earlier the stage, and the more chronic the character of the disease, the greater has been the benefit derived from their operation. In many cases of incipient phthisis, they, combined with other means to be afterwards mentioned, have certainly checked and apparently removed the complaint; and in some examples of old chronic disease, accompanied with evident dulness below one or both clavicles, but without any evidence of cavities or softening tubercles, great and obvious advantage has resulted from their use. In acute or febrile phthisis, they, like every other remedy, have seemed to do little good. Where considerable debility and much perspiration have existed, the advantage derived from them has been doubtful; and when hectic has been present, and softening has decidedly commenced, they have not seemed to check the progress of the disease. Yet they have often given considerable temporary relief, and Dr. H. not only believes them the most effective

remedies in the early stage of phthisis that he knows of, but that they hold out a probable hope of the cure, or, at least, the suspension of the malady.

2. *Depletion*.—Dr. H. has never ordered venesection, unless there have been *symptoms*, as hæmoptysis or pneumonia, which appeared to indicate the necessity of employing the lancet. Local bleeding has, however, been prescribed extensively and advantageously, especially in cases in which, from the physical signs, there existed evidence of bronchitis in that part affected with tubercles, or of local pneumonic consolidation resulting from their deposition. Three or four ounces of blood have been taken by cupping, or six or eight leeches have been applied below one or both clavicles; and have been repeated in three or four days, or a week, if auscultation has proved that the local inflammation has not been removed or materially reduced. The effect of this practice has been very beneficial; and the patients have loudly expressed the relief it has afforded them. Unless, however, local congestion, bronchitis, or pneumonia has been present, even topical bleeding has not been prescribed.

3. *Counter-irritation* has generally been ordered in different forms, according to the nature of the cases in which it was to be used. In those accompanied with local bronchitis, after, or in some instances without, the use of topical bleeding, small blisters have been applied below the clavicles, and repeated once or oftener, according to the effect produced. In the more chronic forms of the complaint, the tartar-emetic ointment has been preferred; while in the cases in which the patient has been delicate, and susceptible, in which there has been a more or less abundant clear serous-looking secretion from the bronchial membrane, occasionally mixed with streaks of blood—whether there has been tolerably decisive evidence of the presence of tubercles in the lungs, or no physical sign of their existence, and merely a fear of their probable deposition—or whether softening has already commenced, Dr. Hughes has ordered the liniment, composed of acetic acid and turpentine, recommended by Dr. Stokes, to be freely rubbed on the chest, night and morning. The effect of the blisters has been in the particular cases for which they have been ordered, as in ordinary cases of bronchitis unaccompanied with tubercles, almost always beneficial. The liniment—which, for the purpose of extemporaneous prescription in hospital and dispensary practice, has been composed merely of one ounce of strong acetic acid and two ounces of spirit of turpentine shaken together—has been of very great service. The advantage derived from the use of the tartar-emetic ointment, and other counter-irritants, in the chronic examples of the complaint, has been much less decided. Dr. H. doubts, indeed, whether, when ulceration has not already commenced, any positive benefit has resulted from their application.

We cannot say that this quite accords with our own observation and experience. Small leechings, occasionally employed, succeeded by the use of either blisters, the liquor lyttæ, or the tartar-emetic in ointment or in plaster, have, in our hands, been productive of much service.

4. *Antimonials* have been principally ordered in the cases accompanied with bronchitis and the expectoration of viscid frothy mucus. Under such circumstances, the tartrate of antimony, in doses of one-eighth or one-sixth of a grain, with or without a few grains of the extract of conium, has been given with good effect, but has been withheld immediately the inflammatory symptoms have ceased. In another, and in many respects an opposite class of cases, in which cough, accompanied with, and in some instances apparently dependent on, unusual dryness and irritability of the bronchial membrane, has been the symptom principally complained of, Dr. H. has prescribed the antim. oxysulphuret. in doses of from five to eight grains, to be taken three times a-day. The operation

of the medicine has been uncertain. In some instances, it has produced no effect, either good or bad; while in others, very marked relief, occurring simultaneously with the appearance of the bronchial secretion, has followed its administration.

Iodine.—It was not unnatural to resort to it in phthisis. Let us hear what Dr. Hughes has to say of it. By him iodine and its preparations have been freely and frequently administered, and in some cases with very excellent effect; the patient's appearance having improved, and his strength increased, under their use. In others little or no benefit was derived from their employment, and the patients have gradually discontinued their attendance; while in some few, the cough has been aggravated, and the stomach has been rendered irritable by the medicine even in small doses. It has been given in doses of one-twelfth to one-eighth of a grain, with two or four grains of the iodide of potassium, and half a drachm or a drachm of syrup of poppies, either in simple water, or more commonly in the infusion of calumba. Dr. H. states his conviction, that iodine and its preparations are very valuable remedies in the treatment of incipient phthisis.

Sedatives.—Dr. H. has only prescribed them to quiet the cough, and occasionally procure rest. When the cough has occurred in paroxysms, hydrocyanic acid has been sometimes given with temporary benefit; though its action has certainly not been so strikingly advantageous, even under such circumstances as some Italian physicians have represented it. In other cases, a few grains of conium have been added to other important remedies; and either it, hyoscyamus, or the muriate of morphia, has occasionally been given at bed-time, to procure sleep.

Tonics.—When the local irritation produced by tubercles has been subdued, or when it has not existed, tonics have been freely administered, with the view and hope of improving the general health of the patient, and of changing that morbid condition of the fluids and solids of the body upon which the secretion of tubercular matter probably depends. They have usually been given in conjunction with iodine: but where this medicine has disagreed, or not acted beneficially, either the oxide of iron, or the tinct, ferri sesquichlor., has been combined with a bitter infusion: or a grain of sulphate of iron, and one or two of the sulphate of quinine, have been prescribed with infusion of roses. Together with these have been ordered as nutritious a diet as the stomach was able to digest, or bear without inconvenience; moderate exercise in the open air; and, where they were attainable, the use of horse exercise—a residence in the country, where the air was mild and dry—and a constant exposure to its invigorating influence, which Dr. Hughes regards, and we agree with him, as the best tonics of all. In fact, so far as we have seen, tonics are much abused, and often mischievous.

Dr. Hughes concludes his paper with a notice of the principal forms of phthisis, and the remedies generally useful in them.

1. *The Bronchitic.*—That variety, of by no means unfrequent occurrence, in which a person who is either hereditarily or accidentally predisposed to consumption, but who, with the exception of great susceptibility to catarrh, and the existence of more or less marked indications of tubercular cachexia, has hitherto presented none of the ordinary pulmonary symptoms of phthisis, is troubled after an ordinary cold—perhaps but little more severe than usual—with a persistent cough, with frothy mucous sputa, hurried respiration, and slight febrile excitement. On examination of the chest, there are discovered, *confined to the apex of the lungs*, a mucous rattle, which is generally distinguishable, by a delicate and well-educated ear, from the “moist crackling” of softening tubercles; an

increased resonance of the voice in one or both infra-clavicular, acromial, or supra-scapular regions; and sometimes, by accurate comparison with other regions, a slight dulness or modification of sound, on percussion of the parts affected. In these cases, the use of cupping, or the application of leeches, below the clavicles, with the internal exhibition of a sixth or quarter of a grain of tartrate of antimony, sometimes combined with two or three grains of the extract of conium, and an occasional saline aperient, have been first prescribed, for the reduction of the local inflammatory symptoms. If, in a week, they have not ceased, or been materially diminished, the remedies have been repeated, or the topical bleeding has been replaced by small blisters. When the bronchitic symptoms have disappeared, as they usually have under this mode of treatment in a few days,—and when cough, hoarse, dry, or rough inspiration, with an increased duration or intensity of the expiratory murmur, and slight modification of the voice, have been left behind,—emetics every other morning, a mixture containing iodine, and the acetic acid and turpentine liniment, have been employed with very excellent effect. After the use of these for a few weeks, the patient has often presented no other general symptom of his complaint than a pale face and slightly accelerated pulse. Tonics, country air, and a nutritious diet, have then been recommended; and their use, when attainable, has been followed with great improvement of the general health, an increase of flesh and colour, and sometimes with an absolute removal of every physical sign of tubercular deposit, except perhaps a very little hoarseness of the respiration.

It is not always, however, that things go quite so favourably as this.

The Hæmoptysic.—"If a person of apparently vigorous constitution, and in good health, whose respiration has been previously unaffected, or whose dyspnoea has approached so gradually as to have escaped the observation both of the patient and his friends, has been suddenly attacked with hæmoptysis to a large amount, which, by appropriate treatment previously adopted, has been subdued, and has not since recurred; if, since the occurrence of the hæmorrhage, he has been constantly troubled with a cough, from which he had not before suffered; if the presence of pulmonary congestion has still been indicated by dyspnoea, partial turgescence of the face, a full though soft pulse, and a sibilant or sonorous rattle, mixed at some parts with soft crepitation; venesection, with saline aperients and the mineral acids, have been at first ordered, and have been followed by topical bleeding or blisters. If the hæmoptysis has recurred, or has only recently taken place, a mixture, containing the acetate of lead, acetic acid, and opium, has on some occasions been added to the means already mentioned; and, in others, a tea-spoonful of the spirit of turpentine has been ordered, to be taken at the accession of the hæmorrhage. This last remedy I have sometimes known almost immediately to succeed, when other medicines had failed in arresting the bleeding. In other examples, in which, after coughing up a small quantity of blood, the sputa have continued to be tinged with that fluid, or in which the expectoration has contained only a few streaks,—and the patient has at the same time been of lax fibre, with a small and feeble pulse, and without any febrile excitement,—I have, together with saline aperients and a blister, given eight or ten minims of tinct. ferri sesqui-chloridi three or four times a-day, with very great benefit."

Dr. H. has never known emetics either excite or reproduce the hæmorrhage. Yet he is chary of them, until hæmoptysis has passed away.

The Simple Chronic, which includes those cases not accompanied by either bronchitis or hæmoptysis. In this form of the complaint, emetics have generally been ordered to be taken every morning, and have often been continued for three or four weeks; the frequency of their repetition, and the continuance of their use, being regulated by the duration, the decrease, or cessation of the symptoms.

Their effect upon the cough has been really astonishing; and their influence upon other symptoms, though perhaps less obvious, has been exceedingly beneficial. In conjunction with frequently-repeated emetics, iodine, in the form previously mentioned, has been almost always administered in these cases; and the tartar-emetic ointment, as a counter-irritant, at the same time applied to the infra-clavicular regions. When the cough has entirely ceased, and most of the physical signs have disappeared, more decided tonic remedies, as the iodide or sulphate of iron, a nutritious diet, and country air, have been recommended.

A valuable paper.

OBSERVATIONS ON DIABETES: WITH CASES ILLUSTRATIVE OF THE EFFICACY OF AMMONIA IN THE TREATMENT OF THAT DISEASE. BY GEORGE H. BARLOW, M.A. & L.M.

The following paper is one of a kind that the improved state of modern organic chemistry is giving rise to. Hypothetical perhaps, yet displaying theory based on science, and very superior even in its errors to the speculative spirit of the olden time.

Dr. Barlow observes that the opinion of Sydenham is rather gaining ground that diabetes is referable to a derangement of the stomach and chylopoietic viscera, rather than to a perverted action of the kidneys. This opinion he canvasses chemically and ingeniously, if not satisfactorily.

He quotes Müller for the purpose of shewing that the urinary secretions is "the means of carrying out of the system decomposed and effete animal matter, such as urea and lithic acid (the essential components of the urine), superfluous saline matters, and, either in an altered state or in their original condition, foreign matters which have accidentally entered the circulation." Dr. Barlow adds, that the urea and lithic acid, the essential components, are highly azotized combinations; whilst in the graminivorous mammalia the place of the lithic acid is supplied by hippuric acid, a substance containing little more than seven per cent. of nitrogen: so that, of the great depurating organs of the body, the office of the lungs appears to be, to separate carbon in the form of carbonic acid; the liver removes carbon, hydrogen, and nitrogen, but chiefly the former; so that it may be regarded as in great measure co-adjutive or supplementary to the lungs, but as having a superadded function of its own: the kidneys, again, separate carbon, hydrogen, and nitrogen, but principally the latter (as well as superfluous water); so that they are in some measure co-adjutive to the former, but have a superadded function of their own: the skin, again, is supplementary to all the rest, but particularly the kidney, and has an additional function of its own.

"Upon this view of the subject," he argues, "we should expect that the office of one of these organs may be wholly, or in part, performed by one or all of the others; and, accordingly, comparative anatomy teaches us, that in the different classes of vertebrate animals, the development of the liver increases in the same measure as the respiration diminishes; being at its maximum in fishes, at its minimum in mammalia, and having its mean amongst reptiles: whilst we learn, from every day's experience, that when the bile ceases to be poured forth by the ductus choledochus, it makes its appearance in the urine.

The presence, therefore, in the secretion of one organ of a substance more nearly allied in its elementary composition to that of another organ, should rather be ascribed to a defective performance of function in the latter, than a perverted action in the former; or, in other words, the presence of a highly-carbonized product in the urine would indicate impaired function of any other excreting organ rather than of the kidney. Hence the *à-priori* arguments to be drawn from the physiology of the kidney are opposed to the belief that the

presence of sugar in diabetic urine is the effect of a morbid condition or action of the kidneys.

Again, what is to be inferred in reference to this subject from the pathology of other morbid conditions of the urine? or what do other morbid products indicate?

Not to encumber this communication, the object of which is more especially of a practical nature, with observations not bearing directly upon the subject before us, it will be sufficient for our purpose to remark, that of all the other morbid contents of the urine, there are none except those which are component parts of healthy blood, the presence of which has been traced to disease of the kidney; consequently, the knowledge we possess of the pathology of other diseased conditions of the urine affords no *à-priori* reason for ascribing the presence of sugar in the urine, which is never found in healthy blood, to disease of the kidney.

Since, then, there is no antecedent probability that the presence of sugar in the urine is the result of any lesion of the kidney; and since sugar has been detected in the blood of the subjects of diabetes by Mr. M'Gregor, Ambrosiani, and Dr. Rees (the latter of whom has proved that it exists in considerable quantities); it would be well to inquire how far its presence in that fluid is capable of accounting for the symptoms of this disease:—and, first, as regards the urine.

It appears, from the conclusions drawn by Woebler from his researches, 'that all soluble, and not gasiform matters, which do not suffer decomposition in the system, are got rid of by the kidneys;' whence it is evident, that sugar, being taken up into the blood, must necessarily appear in the urine. It has indeed been argued, that the quantity of sugar found in the blood of diabetic patients is not sufficient to account for the quantity in the urine. This objection can, I think, have little weight, when we consider how quickly many soluble substances, when introduced into the system, are expelled by the urine. Again, it appears that those matters which are prone to pass out of the system by any particular secreting organ are stimulants of that organ; as is seen in the stimulant action of the neutral salts on the kidneys; whence sugar, being present in the blood, and being separated from it by the kidneys, must necessarily increase the flow of urine.

There remains one other condition of the urine to be noticed; namely, the diminished quantity of urea. This deficiency is, however, by no means certain; as it has been called in question by several very able chemists; amongst others, by Mr. Kane. It may not, perhaps, be satisfactorily made out, that urea is expelled in this disease in as large quantities as in health; but I think that it has been shewn that enough is separated to confute the opinion frequently expressed, that sugar is formed instead of urea. Indeed, I should be inclined antecedently to expect that it would be deficient in this disease; since nutrition and excretion being, in health, antagonist processes, it is not improbable that the diminution of the former by disease may induce a deficiency of the latter.

It appears, then, that the presence of sugar in the blood is of itself sufficient to account for the abnormal condition of the urine."

The thirst and dryness of the skin may be ascribed to the drain of water from the diuretic action of the sugar—the hunger to the atrophy, the consequence of the depraved state of the blood. Then which is the erring organ? Dr. Barlow reasons thus:—

"The circumstance of the morbid ingredient being a highly carbonized substance might at first lead to the belief that either the lungs or liver, or both, were involved in its causation; and it is probable that they are more or less implicated: but the fact, that sugar has been discovered by Mr. M'Gregor in the stomachs of diabetic patients in greater quantities than in health, even when such patients have been almost entirely restricted to an animal diet, affords a

proof that the derangement in sanguification must take place when the nutrient fluid is in an earlier stage than that in which it is subject to the action of these organs; and that the primary disturbance may be traced to the *primæ viæ*. And here it would be well to reflect upon the product of digestion in health, and in this disease. I again quote the words of Müller:—'The end and object of digestion is, first, the solution of the food, since nothing can be taken up by the absorbent vessels which is not in solution; and, secondly, the reduction of the different ingredients into the most simple material of the animal processes, namely albumen, which is found to be contained in the fluid resulting from the digestion of the food, partly in the state of solution, and partly in globules. The essential character of the digestive process consists in its not only effecting the solution of the food, but in its likewise annulling the peculiar properties which the nutritive matters may owe to the source whence they are derived; that is to say, in dissolving the food, and converting all into albumen.'

In this disease, on the contrary, the saccharine particles of the food are not changed in the stomach; whilst the starch, which most articles of vegetable diet contain in considerable quantities, not having its peculiar properties annulled, and its proneness to the saccharine fermentation being favoured by the warmth and moisture of the stomach, is converted into sugar, which, being readily soluble, is absorbed into the circulation."

Thus, from some defect in the assimilating power, a lower product, starch, is found in lieu of a higher one, albumen. The former is inadequate to the purposes of the economy, and is eliminated by the kidney. It is not, however, actually proved that there is a diminished quantity of albumen in the blood, though that is probably the case. Let us turn to the remedial principles founded on the preceding views.

"The next inquiry is, what are the inferences to be drawn from it respecting the treatment of diabetes. The first is obviously one, the correctness of which has long been acknowledged, and confirmed by experience; namely, the avoidance of all saccharine and amylaceous articles of food; the latter of which, from their tendency to saccharine fermentation, are, I believe, productive of as much mischief as the former. I have, however, little to add to what is generally received upon this point, further than to insist on the advantages of the cruciferous vegetables as articles of diet; the use of which is not only in accordance with the view taken above, but has received the sanction of many experienced physicians. Not only do greens, broccoli, turnip-tops, sea-kale, water-cresses, &c. tend to obviate the loathing which is often felt by these patients when restricted to an animal diet, but they exert a decidedly beneficial influence over some of the symptoms: and it will be seen, in a case to be related presently, the discontinuance of the use of greens was always followed by increase in the flow of urine.

The next indication appears to be, to introduce into the stomach a highly azotized substance, and at the same time, by a diffusible stimulant, to exalt, if possible, the assimilating powers of that organ; both which ends appear likely to be attained by ammonia.

There is one circumstance connected with the employment of ammonia in this disease; upon which, however, I do not wish to lay great stress, although it is at least a coincidence too remarkable to be passed unnoticed;—I mean the chemical relation of sugar, ammonia, and albumen, as regards their elementary composition. Thus we find, that when the numbers which represent the atomic composition of ammonia and sugar are added in certain proportions, we obtain a result which exactly coincides with the numbers representing the atomic composition of albumen, increased by certain equivalents of carbonic acid and water, substances which are continually excreted from the body.

	Carbon.	Hydrogen.	Oxygen.	Nitrogen.
9 Eq ^m . Sugar	55.08	9	72	0
+ 1.1 Eq ^m . Ammonia.....	.....	3.3	.....	15.56
	55.08	12.3	72	15.56
— 5 Eq ^m . Water .....	.....	5	40	.....
— $\frac{1}{2}$ Eq ^m . Carbonic Acid..	3	.....	8	.....
	52.08	7.3	24	15.56
Which, reduced to 100 } parts, gives	52.63	7.37	24.25	15.73
Albumen (according to } Gay Lussac & Thenard)	52.88	7.54	23.87	15.70"

Dr. B. has found that under the use of the sesqui-carbonate of ammonia the function of the skin is generally restored; though he has sometimes thought that opium assisted in effecting this result. Such exercise as the strength of the patient will enable him to take, and the use of a warm bath occasionally, where it can be obtained, are also valuable adjuvants. The accumulations which not unfrequently take place in the large intestines are best removed, he thinks, by a purgative with a tonic—rhubarb and sulphate of potass, aided, if requisite, by castor oil, are preferred by him.

Dr. Barlow relates five cases. We shall select the first as a sample, and perhaps a favourable one of the whole. For the remainder are unfortunately far from conclusive as to cure, though conclusive enough as to benefit. They resemble many other cases, treated by many other remedies, that have been from time to time brought forward with the flattering anticipation of more decided and permanent advantage than has been obtained. We fear that we can hardly dare to look to a diffusible stimulant, as a means of a class that *must* have been often tried by doctor and patient, for victory over so intractable a malady. But to the case.

Case 1.— Stanley, a shoemaker, applied to me, at the Surrey Dispensary, in the summer of 1836; stating that he had been told that he was the subject of consumption, having lost flesh and strength very rapidly for about a month. I accordingly examined his chest; but could detect none of the physical signs of phthisis. Upon further inquiry, I learned that he had for some days been struck with the great increase in the quantity of his urine, which amounted to fifteen pints in the twenty-four hours. He was, moreover, much emaciated: his skin was very harsh and dry, which he told me was the case by night as well as by day: his tongue was loaded: he complained of great thirst; and said that his appetite was excessive. His urine was sweet to the taste, and of sp. gr. 1.041. He was at first put upon the use of one grain of opium every four hours; some castor-oil being ordered occasionally, to regulate the bowels: the rules respecting diet, above laid down, being also enjoined.—At the end of five days his urine was much diminished in quantity; but the specific gravity increased to 1.044: he was also at that time in a state of great prostration, which was perhaps in some measure attributable to the opium. He was then ordered to take six grains of the sesquicarbonate of ammonia three times a day, in a draught containing one drachm of sp. lavend. comp.; and five grains of Dover's powder every night; by continuing which, the quantity of the urine was, at the end of eight days, reduced to twelve pints in twenty-four hours, and the specific gravity had decreased to 1.035: he also perspired moderately at night, and the thirst was much abated. I now increased the quantity of the ammonia to eight grains every four hours; under the use of which, the quantity and specific gravity of

his urine rapidly diminished; and at the end of six weeks he had so far recovered his flesh and strength, that he considered himself well, and left the Dispensary. At the end of five weeks, however, he again presented himself; stating that his former symptoms had returned. His skin was then harsh and dry; and he told me that his urine rather exceeded two gallons in twenty-four hours. He had lost flesh considerably since I had last seen him; but he was not so much emaciated as when he first came under my care: his tongue was clean, but moist, and his breath had the odour of hay. He was treated in the same manner as before; and at the end of two months he was again discharged, apparently in good health; his urine being about three pints in quantity, without saccharine taste, and of specific gravity 1.020.—I ascertained that this man was in good health in the summer of 1839."

Dr. Barlow has our thanks for his Paper. It deserves consideration.

OPERATION FOR THE RADICAL CURE OF A REDUCIBLE INGUINAL HERNIA.
By BEANSBY B. COOPER, F.R.S. &c. &c.

The following case is very interesting.

A man, aged 22, tall and muscular, had had a reducible inguinal hernia on the right side for seven years, when, on the 26th of May, 1840, a larger portion was forced down, and was, with difficulty, returned in Guy's Hospital. On the slightest exertion, however, the hernia descended again. The man was employed on the Greenwich Railway, and severe exertions were necessary. These were out of the question with such a hernia, which no truss could be got to keep up. Mr. B. Cooper accordingly deemed it a fair case for the operation recommended by M. Gerdy.

On the 10th of June, the patient was brought into the operating theatre, and laid upon a table, on his back, with his chest and thighs raised, for the purpose of relaxing the abdominal muscles. Mr. Cooper then commenced the operation by pushing a portion of scrotal integument before the forefinger of his left hand, through the external ring, into the inguinal canal, as high as he could pass it; and upon the finger he then introduced a director. A long needle, fixed in a wooden handle, and having the eye, near its point, armed with a double silk ligature, was then carried along the director to the very extremity of the invaginated skin, and was pushed through the tendon of the external abdominal oblique muscle and the skin, so as to make its appearance an inch and a half above Poupart's ligament: one end of the silk was then retained by an assistant, and the needle drawn back again into the inguinal canal, along the other end; when it was again pushed through the abdominal parietes, in a similar manner as before, about four lines distant from the other end of the thread, including necessarily so much of the skin between the two silks; which were now tied over a piece of bougie, so as to retain the invaginated portion of skin within the inguinal canal. A piece of lint, wrapped around a director, and dipped into liquor ammoniæ, was passed into the cul-de-sac of skin thus formed; and the surface well rubbed with it, in order to remove the cuticle, and promote an inflammation in the cutis, so as to obliterate this integumentary canal, and to form a plug sufficiently firm to prevent the future descent of the hernia.

The application of the ammonia caused intense pain.—The patient was now taken to his bed, placed in the same position as before the operation, and the scrotum well supported. An hour and a half after the operation, as great pain was still complained of, a grain of opium was given, which afforded but little relief. At nine in the evening, Mr. Cooper saw him; at which time there was great distress of countenance, profuse perspiration, and the pulse quick, but compressible; and there was not any pain produced by pressure on the abdomen.

We need not pursue the diurnal details. The symptoms of irritation gradually passed away. A discharge, of purulent character, from the invaginated skin made its appearance on the 12th. On the 13th, the scrotum was strapped up, so as to press against the margin of the opening from the invaginated portion of skin.

14th.—The ligature was removed, as purulent discharge was now most freely established: but the pressure on the part was desired to be continued, and every thing seemed to be going on favourably. But on the next day there appeared a degree of fulness about the margin of the opening, as if a portion of the inverted skin had descended; but without any descent of intestine, and the hardness and swelling about the inguinal canal still led to the reasonable hope that the operation would prove successful. In this state he continued for several days, until the tenderness about the inguinal canal had sufficiently subsided to allow of a greater degree of pressure being made upon the part; the patient being still kept in the recumbent posture.—After that time all uneasiness had left him; and the patient described that he felt the affected side as firm as the other; which the thickening in the course of the canal seemed to justify. On the 4th of July, a weak truss was adjusted to the part; and he was still desired to remain in bed; which he did for ten days more, when they could no longer keep him in bed. He remained yet a fortnight in the hospital, wearing his truss, and walking about without any descent of the hernia occurring; and left Guy's at the end of July, to resume his occupation on the rail-road, with the promise of being, at first, put only to slight work. This was observed, and early in August, he resumed his old occupation as hammer-man, a more severe one. Unfortunately, he was only protected by the weak truss which was given to him while in the hospital: so that, upon one occasion, a portion of intestine again descended into the inguinal canal, while at work. A much stronger truss was then substituted for the weak one; and since its application, he has had no return of his complaint, but is enabled to perform all the duties of his situation.

Mr. Cooper observes:—It is true, from the history of this case, that the operation has not entirely succeeded, not having led to the perfect obliteration of the inguinal canal: but still it is to be remembered, that, before he submitted to it, no truss could prevent the descent of his hernia rendering him entirely incapable of the slightest exertion; while now, on the contrary, by the use of a common truss he is rendered an efficient labourer: and there is little doubt, had a proper truss been employed before he resumed his more laborious occupation, that no protrusion would have ever recurred; and that in a year he might have left off the use of a truss altogether; which, under the present circumstances, it will not be safe for him to attempt.

OBSERVATIONS ON ABDOMINAL TUMORS AND INTUMESCENCE: ILLUSTRATED BY CASES OF DISEASED LIVER. By R. BRIGHT, M.D. F.R.S. &c.

In following out the subject of abdominal tumors, Dr. Bright draws, in the present Paper, his illustrations from the *Liver*.

In seeking, says our author, to render our diagnosis as correct as possible, in any case of hepatic disease, we are necessarily led to attempt to discover the size and form of the affected organ; a task, in many cases difficult, if not impossible; and sometimes, when performed, liable to lead us astray, unless we carefully take many other circumstances into consideration; but at other times affording us the most important information towards the discovery of disease.

One of the chief sources of difficulty, in ascertaining the size and form of the liver, depends upon the situation of the organ: for it is so placed, with regard to the ribs and the diaphragm, that, in its most perfect state of health, it is almost as much concealed from the sight, and removed from the touch, as the

contents of the cranium. Another difficulty arises from the liver being liable to displacement, from causes independent of disease within itself; as from occasional, though not very frequent deviations from its natural position, and from pressure exerted upon it by effusions within the right cavity of the chest, or from tumors between the liver and the diaphragm. And a third source of difficulty is found in the induration and enlargement of neighbouring organs; as of the right kidney, the stomach, the omentum, and the colon. Still in most cases we can arrive at a very satisfactory knowledge of the size and form of the liver, when it deviates at all considerably from its normal state.

Dr. Bright observes, in reference to the natural site of the viscus,—The large right lobe of the liver, in its healthy state, lies completely in the hollow formed by the diaphragm, not descending below the margin of the ribs, and extending upwards to between the sixth and seventh ribs on the right side. The left lobe usually extends to the soft space below the ensiform cartilage, a short way into the left hypochondriac region; and a portion of its lower margin is thus seen lying across the scrobiculus cordis when the body is opened, and is frequently the only part of the organ which is visible.

As a necessary consequence, he goes on to remark, of this situation, the healthy liver influences very little the sound produced by percussion on the soft part of the abdomen; which, if all the organs are free, healthy, and empty, is usually clear and sonorous, from immediately below the margin of the ribs, to the very lowest part of the pubic region. If, then, the sound in any part be dull, it is our business to ascertain the extent and connection of such unnatural sound: and in this way, if we can trace an uninterrupted dullness to the margin of the ribs on the right side, our suspicions may fairly be excited, and the liver is the origin of the disease. The more perfect and the more practised the ear, the more likelihood there is of tracing the deviations of sound from their natural clearness: but in some cases of very extensive disease, where the liver or other organs are irregularly enlarged or tuberculated, the investigation is most difficult. Yet still, Dr. Bright thinks the touch more fallible than the ear, in cases of extensive tubercular or fungoid deposit in the abdomen. We must never suffer ourselves to be led into the error of denying the existence of hepatic tumor because the dullness or the hardness are so extensive that they appear to reach beyond the probable bounds of the liver; for, in fact, there is no tumor, of which the abdomen will admit, so large that it may not be an enlarged liver: and if we can satisfactorily trace the continuity of the dull sound, or the hardness under the ribs of the right side, while no other obvious indication leads us to ascribe it to another organ, we may legitimately consider the liver as the seat of the disease. But after all, we shall not be always right.

It would be an error to suppose the rapidity with which the tumor has appeared to be inconsistent with the idea that it can have originated from the liver; for we find tumors of the most extraordinary extent generated in the liver in a few weeks:—nor are these always attended with such remarkable pain as might be expected under such rapid distention of structure.

The general symptoms or condition afford valuable assistance.

Disease of the liver seldom exists long without producing a peculiar appearance in the countenance of the patient. In some cases, as we shall see, actual jaundice, and that of the most decided character, accompanies hepatic tumors; but many of the more formidable conditions of the liver are indeed, but slightly marked by this symptom. Still, the approach to the jaundiced state, the sallow cheek and temples, and the lightly-tinged conjunctiva, are most often present when disease has greatly altered the structure of the liver, or gone on to the formation of tumor. To this, however, there are remarkable exceptions; so that the absence of the symptoms should never lead us to repudiate the idea of hepatic disease. Fungoid growths to a very considerable extent may occupy the liver, and yet no jaundice, and no approach to it, may be present. Fatty

intumescence of the liver has often been recognised by a peculiar marbly appearance of the skin that it gives birth to.

2. Gradual or rapid emaciation, with a peculiar cachectic aspect, frequently accompanies disease of the liver; though even this is far from constant; for there are certain forms of disease in which the liver is enlarged, and which are marked rather by an increased deposit of fat in the cellular membrane of the body, and in the omentum and mesentery, than by emaciation. The state of the bowels and the stomach greatly assists our diagnosis. Hæmorrhages taking place from the stomach and intestinal canal, and effusion of serum into the cavity of the abdomen, are amongst the symptoms which call our attention to the condition of the liver, and often strengthen our diagnosis.

The tumors depending upon the liver vary greatly in the extent they occupy, as also in their characters; sometimes descending scarcely below the margin of the ribs, and sometimes encroaching upon the pelvis. They are sometimes smooth and even; sometimes lobulated, with greater or smaller inequalities on the surface; sometimes soft and yielding; sometimes hard.

Dr. Bright, before entering on the consideration of hepatic tumors themselves, points out the growths or morbid affections most apt to be confounded with them.

1. *Accumulations in the Colon*.—Amongst, says Dr. Bright, the many sources of such mistakes, by which physicians may be misled, and induced to conclude that the liver is the seat of disease when in fact it is not, feculent accumulations in the colon are perhaps the most frequent; and they lead to a deception the more complete, because they occasionally imitate, in the most striking manner, enlargements of this and other organs, and appear to afford a decided and tangible evidence of disease such as few can withstand, even to afford time for making trial of remedies, which, by acting freely on the bowels, might at once shew the cause, and remove the tumor. Dr. Bright relates the particulars of four which have occurred under his own observation.

The *first* case was one of accumulation of feces in the sigmoid flexure of the colon, imitating organic tumor.

The *second* case was one of fecal accumulation in the colon, imitating hepatic enlargement.

The *third* case—fecal accumulation in the colon, imitating fungoid tumor.

The *fourth* case—fecal accumulation in the colon, imitating malignant disease of the liver.

We must content ourselves with quoting the fourth case, one as much in point as any.

“CASE 4.—*Fecal Accumulation in the Colon, imitating Malignant Disease of the Liver.*”

A. B., a seafaring man, aged about 55, was admitted into Guy's Hospital, under my care, with a hard lobulated tumor, about midway between the point of the ensiform cartilage and the umbilicus, in which he suffered considerable pain, both from pressure and without it. His complexion was sallow: his bowels stated to be freely opened. After careful examination, I had very little doubt that the tumor was organic, and connected with the left lobe of the liver: nor did the effect of remedies, or the appearance of the patient, at all deceive me for some weeks; but I presently began to suspect that the pains, of which he made such frequent complaint, were rather of a spasmodic character, and such as indicated some detention of feces in the intestine. I therefore put him on a more decided plan of purging than at first, though the bowels had never been neglected. He now took repeated doses of compound extract of colocynth, galbanum pill, blue pill, and small quantities of muriate of morphia. The effect was, after a few days, to bring away a quantity of hardened balls of

feces; and, in proportion, to diminish the supposed malignant tumor, till both pain and morbid growth, and every other symptom of disease, had disappeared."

Dr. Bright would be inclined to say, that, whenever an abdominal tumor occurs, in what may be considered the course of the colon, we should be very guarded in our diagnosis: and yet this will hardly cover all the possible cases of deception; for the colon is itself, of all the viscera of the abdomen, that which varies most in its course; so that scarcely a month passes in which we have not an opportunity of witnessing some variation:—as an illustration of which, he refers to three instances which he saw within ten days of each other. In one, the arch of the colon suddenly descended below the umbilicus; in another, the sigmoid flexure advanced beyond the same point; and in the third, the sigmoid flexure performed two complete convolutions, the least of which ascended to the duodenum where it commences in the stomach, and then descended to the pelvis.

2. *Disease of the Kidney*, frequently occasions difficulty in diagnosis. For though it seldom enlarges in such a way as to push the right lobe of the liver before it, yet it often presents itself as a tumor, proceeding from the under surface of the right lobe: and as it has sometimes attained a considerable size before it has been detected, it has been supposed to be continuous with the liver, and a growth from its substance.

3. *Disease of the Stomach*.—Disease of the stomach might be mistaken for tumor of the liver, particularly of the left lobe; but this will not often occur. The small curvature, when scirrhus, and particularly when fixed by disease to the liver, resembles greatly hepatic tumor. A malignant tuber in the stomach likewise, or a malignant thickening of the whole of that organ, may at first sight deceive; but strict examination, particularly by percussion, will demonstrate the cavity beneath, and shew that the disease is situated in a hollow viscus. In general, the pain referred to the stomach, and increased or excited by eating, the frequent nausea or vomiting, the marked emaciation, and the absence of the more remarkable symptoms of hepatic disease, will enable us to determine that the tumor belongs rather to the stomach than the liver.

4. *Morbid Growths of the Omentum or Peritoneum* may assume a very near resemblance to the liver studded with tubera or enlarged by disease: in most cases there will be found an obvious separation between the tumor and the liver, and a space where the colon or the stomach emits a clear sound on percussion; and the hard portions in the enlarged abdomen will be separated in a manner which will prove that they are not connected with the liver: there will likewise be an absence of many of the symptoms of hepatic disease. Dr. Bright, however, introduces one case for the purpose of shewing the difficulties that may be experienced.

CASE.—*Malignant Disease of the Peritoneum, resembling Hepatic Tumor*.—On the 22d of November, 1830, Dr. B. was requested by Mr. Fernandez, to see a shoemaker, aged 44. The account obtained was, that about a year ago he first felt a small lump below the ensiform cartilage; and the hardness seemed to increase across the stomach at the upper part, gradually extending downwards, to the present state: for some months he had occasionally vomited his food; and for the last six weeks this had happened constantly, about half-an-hour after eating, without pain or difficulty: though the nurse said that what he vomited was of a dark colour, having both the appearance and smell of fecal matter. The stools were dark. His countenance pallid, but not sallow; and he had never had any thing approaching to jaundice. On examining the abdo-

men, there were two or three projecting lumps, of the size and nearly the shape of half an egg, near to the scrobiculus cordis; and the whole upper part of the abdomen presented one uniform hard substance, almost as firm as cartilage, giving a general and equal fulness to the abdomen: this hardened condition extended almost to the pelvis, where there was a distinct lobulated margin to be traced, in the form of the lower margin of the liver: this descended lowest on the right side, but also was low on the left, where one or two lumps were to be felt, like independent tubers separated from the general mass. Increasing exhaustion took place, and, on the 9th of December, the man died. On the 11th the body was examined.

On removing the external integuments and muscles, the peritoneum remained thickened to nearly a quarter of an inch, in some parts: and when this was thrown back, a large mass, very firm, and nearly the colour of fat, presented itself, descending into the pelvis, and there assuming the form of the liver, with a division between its lobes. This mass extended upwards, so as to push the diaphragm before it, and assume nearly the form of that muscle, in expiration. Raising this mass from below, the intestines came into sight, pushed chiefly to the left side, and covered with rounded masses of a semi-gelatinous form and appearance, assuming quite the disposition of fungoid disease: sprouting up, and growing in botryoidal forms, and giving an indistinct vesicular appearance, when cut through. Many of these fungous masses were arranged near the point where the mesentery joins the intestine; and some were quite pendent by threads not less than half an inch; and some had three or four such threads supporting them, apparently vessels. Many were seated upon the mesentery, or on the intestine. A large mass had formed between the rectum and bladder.

On examining more carefully the large mass which filled the greater part of the abdomen, it was found to be almost entirely formed of the adventitious structure, and the liver and stomach were both included in its substance; the liver not greatly altered in its colour or texture, but dwindled in size; and the stomach greatly contracted, and rendered quite irregular through its whole internal surface, so that the cavity bore no resemblance to the natural form or appearance. This mass likewise descended to the kidneys, which were partially imbedded in it. It could be raised from its lower margin like an enlarged liver, and then the intestines were displayed; but the fungous granulations from the different parts had produced some adhesion. The texture of this mass was quite vesicular; and though it seemed formed of numerous cysts, of almost equal size, not larger than sweet-peas, so that great part of it presented a rather uniform texture, it was evident that it assumed, in some of its loose and less-restrained portions, the structure which Dr. Hodgkin has ascribed to malignant growths; and in many of the cavities a gelatinous matter had collected, as in the ovarian dropsy.

The lungs were healthy, but there were several little transparent fungoid bodies on the pleura. The peritoneum covering the liver was greatly thickened by the same morbid growth, and adhered to the viscus.

4. *Displacement of the Liver by Disease in the right side of the Chest.*—It frequently happens that extensive effusion, or consolidation of the lung, either from pneumonia or malignant disease, depresses the liver so much as to render the sound of the right hypochondrium most remarkably dull for several inches below the ribs; and then it is by no means uncommon to find the medical attendant fully convinced that the liver is enlarged;—and probably now, if not before, he is induced to doubt whether the previous inflammatory attack did not belong to the liver, rather than to the lung or pleura.

Dr. Bright relates two cases illustrative of this remark. They present, however, no feature of particular importance.

In the next case, the liver was pushed down by effusion between it and the diaphragm.

CASE.—Abscess situated between the Diaphragm and the Liver, producing apparent Enlargement of the Liver.

August 6, 1834.—A boy was admitted into Luke's Ward, under the care of Dr. Back, labouring under bronchitis. He became rather suddenly the subject of a very large swelling in the situation of the right lobe of the liver, but passing over, in a cushion-like tumor, towards the left side. No hepatic symptoms presented themselves. It was leeches, and other remedies employed; and at a time when it seemed to threaten great mischief, it rather suddenly diminished to a great extent: and then it very naturally became a question, whether this had been a highly-congested state of the liver from the bronchitis, or whether it might have been feces in the colon, or whether some abscess in the liver had found means to discharge itself. The relief obtained was very temporary; and on the 11th of August he died.

Sectio Cadaveris.—The lungs bore decided marks of bronchitis and of pneumonia: the right lung was adherent to the diaphragm. A large abscess was situated between the diaphragm and the liver, pressing down the latter. Its parietes completely insulated it from the general peritoneal cavity; but it had so compressed the right lobe of the liver, as to produce the complete appearance of an excavation in that organ, as an empyema seems to scoop out the lung with which it lies in contact. The surface of the liver, however, was not broken; so that there was no trace of bile in the abscess.

5. *Malposition of the Liver, &c.*—"The deviations," says Dr. Bright, "from the natural position of the liver, with which I have met, have been very few; but where they do occur, they must necessarily present difficulties in diagnosis, scarcely to be overcome. I have never been present at the examination of a body in which the organ was transposed; but I have seen the left lobe so much elongated and enlarged, without any disease in the structure, as to vie with the right in size; and in other cases, to extend across to the left hypochondrium, reaching quite to the spleen. I have also seen, in one case, the liver placed behind several coils of intestine: so that whatever had been its size or extent, percussion would have yielded a clear sound."

CASE.—Small Intestines situated anteriorly to the Liver.

Mr. Bushfield aged 50, with sallow complexion, had consulted Dr. Bright frequently, in the last two years, for a loathing of food, and a sense of sickness of stomach without vomiting. Bowels costive, but he suffered much from the action of purgatives. He spoke of pain at the scrobiculus cordis, running back to the spine, and up the centre of the chest. He obviously became emaciated; and his symptoms were altogether such, that Dr. B. suspected some malignant disease. In the last year of his life, he had plainly phthisis pulmonalis.

In March, 1835, he died, and the body was examined. In the apex of each lung were old phthisical cavities, and some tubercles in other parts. The heart healthy, but small and flaccid. Towards the pyloric extremity of the stomach were two or three small round ulcers. Pylorus healthy: duodenum granulated. There were several ulcers in the ileum, particularly near the valve, and also in the colon. The mesenteric glands, near the ulcers, slightly enlarged: liver healthy: pancreas congested: spleen twice its natural size: kidneys healthy, but discoloured by congestion.

Such was the condition of the several organs; but the most remarkable circumstance was, the relative position of the abdominal viscera, when the abdomen was laid open. Neither the liver nor the colon presented itself to view;

but, in their stead, the convolutions of the small intestines, which were found to have come completely in front of the liver; the colon and the omentum doubling over the liver, and pressing it back, so as to have made deep furrows in its anterior surface.

6. *Disease of the left Lobe of the Liver.*—Dr. Bright has seen great difficulty arise when the left lobe of the liver alone has been involved in disease, or where the disease of that lobe has been greatly disproportioned to the disease of the right lobe: of which the following case furnishes a good example.

CASE.—Malignant Tumor, confined entirely to the Left Lobe of the Liver, and ascending towards the Thorax.

Ann Cook, aged 59, a widow, admitted into Guy's Hospital, Nov. 6, 1839. Six weeks back, she had been wet through; and was attacked with rigors, flushes of heat and great thirst, with pain in the left side, which she says had existed in a less degree for some time before. This pain was aggravated by cough and deep inspiration.

At the time of her admission, her countenance was expressive of much suffering; and she complained of great pain in the left side, near the angle of the ribs. In the left hypochondriac region, just below the margin of the false ribs, there was a tumor of the size of a large fist, very tender on pressure, and protruding in a very obvious degree, the lower ribs. Tongue brown and dry: urine passed in moderate quantities, depositing the purpurates, and not coagulable by heat.

The right side of the chest, anteriorly, yielded a clear sound on percussion, and the respiration was natural. On the left side, anteriorly, it was dull on percussion, as high up as between the second and third ribs, and no respiration was heard: posteriorly, it was dull on percussion, the respiration tubular, and there was bronchophony. The sounds of the heart heard more to the right of the sternum.—She died in ten days.

Dissection.—On opening the chest, the diaphragm was noticed to be pushed up by the liver, as far as the third rib on the left side; but on the right, only as far as the sixth. The left lung was pushed up very high, as far as the seventh rib; but there was a small portion which was situated lower down, posteriorly, and which appeared much compressed: they were otherwise healthy.

The heart was pushed up, and more to the right side than natural.

Abdomen.—On opening this cavity, a large tumor presented itself: this was situated in the left hypochondriac region, and originated within the left lobe of the liver, which pushed the stomach to the right side. The tumor within the liver was of the size of an adult's head, and of a rounded form: its external surface was firmly adherent to portions of the lower surface of the diaphragm, and posteriorly to the spleen and kidney. On cutting into the tumor, it was found to be of a fungoid nature (*fungus hæmatodes*), originating within the structure of the left lobe of the liver internally.

7. *Other Sources of Difficulty.*—"Besides the difficulties which have already been enumerated, as opposed to unerring diagnosis, we must not omit to mention, that the spleen, when diseased, has occasionally been mistaken for the liver, and the liver for the spleen;—errors into which we may easily fall, when the left lobe of the liver is particularly affected, or is supposed to be so: nor is it an unusual thing to find both liver and spleen enlarged at the same time. It must likewise not be forgotten, that ovarian tumors, encroaching in their progress upon the right hypochondrium, and on the upper portions of the abdomen, have not only by careless and ignorant men, but by the skilful, been pronounced hepatic."

ENLARGEMENTS OF THE LIVER ITSELF.

To these, Dr. Bright now proceeds. He adopts the division into the smooth and the irregular forms of tumor.

In the first of these diseases may be included enlargement from the passive congestion of blood—from acute or sub-acute inflammation; from retention of bile; from chronic hypertrophy; from fatty changes with intumescence; and from diffused malignant disease.

In the second division—tumor of irregular form—may be included, abscess, both acute and chronic; hydatids; the result of chronic inflammation, producing irregular contractions in the cellular membrane of the liver and permanent roughness of its surface; malignant disease in the several varieties of the scirrhus, cerebriiform, and melanotic deposits.

1. *Smooth Tumor or Tumefaction of the Liver from Sanguineous Congestion.*—"The most simple form," says Dr. Bright, "of hepatic enlargement is that which results from sanguineous congestion, where the increase in size is entirely owing to the unnaturally distended condition of the blood-vessels. This form of disease is by no means unfrequent in its less aggravated degree, apparently connected with loaded bowels making pressure upon the returning veins; and probably, with the deficiency and sluggishness of the peristaltic action of the intestines, encouraging delay in the circulation of the blood; which again, when once collected in the liver, proves an additional impediment to the onward progress of the stream. When the liver is thus loaded with blood, it gives rise to many of those ailments which are variously denominated dyspeptic or hypochondriacal, interfering with the digestion, and oppressing the nervous energies of the whole system, and sometimes mechanically impeding the action both of the heart and lungs.—A slight fulness is perceptible on the right side, and the ribs are a little raised. To the hand, the space below the ribs is more resisting, and even hard; and although there is no defined tumor, the edge of which admits of being traced, the dull sound which is elicited by percussion an inch or two below the margin of the ribs contrasts strongly with the clear sound of the hollow viscera which ought to occupy that space.

The enlargement from sanguineous congestion in the limited degree of which I have spoken, may be difficult to ascertain; but there is a degree of congestion betraying itself most manifestly by the enlargement of the organ, which descends several inches below the ribs, and may be felt as a hard full cushion with a defined margin, sometimes on a level with, and sometimes below the umbilicus. In cases of this kind, besides the defined character of the tumor, we have usually a peculiar sallowness of the complexion, which more especially directs our attention to the liver; and that sometimes to such a degree, that experienced physicians have been led away entirely from the primary disease on which the hepatic congestion depended, which is generally some obstruction of the circulation in the heart: and I have known, in this way, a patient supposed to sink under hepatic disease, while ossified valves, and enlarged and distended heart, have been the true cause of all the symptoms. In such cases, it is true that the liver, from being simply gorged, becomes gradually disorganized, passing from the nutmeg liver of distention to the permanent yellow and red liver, in which probably some adventitious deposit or some permanent change of character has taken place; but this is most decidedly a consequence of previous appreciable disease in another organ."

We would point attention to the latter observation, as practical as true. It was only the other day that we witnessed a case of this description. The liver was much enlarged from congestion, and had diverted attention altogether from the condition of the heart which was greatly dilated, with attenuation of its parietes, and adherent pericardium.

Dr. Bright relates a case of *Liver enlarged, and altered in its Structure from frequent congestion*, which, however, we need not go into.

2. *Intumescence of the Liver from Inflammation.*—"It is to be presumed," says our able author, "that in most cases of inflammatory action the bulk of the liver is more or less augmented, in the early stages at least. But it often happens, that the evidence of inflammatory action exists in the pulse, the skia, the tongue, and the altered secretions both from the bowels and the kidneys; and yet no very decided fulness is perceptible in the right hypochondrium: but more frequently we find, on passing the flat hand gently over the part, that it experiences a little more resistance, and a little more sense of fulness, as it arrives at the right side: and, on careful examination with the points of the fingers, we discover the margin of the liver descending from one to two inches below the cartilages of the ribs; and, on applying percussion, the sound is dull over a corresponding space. Sometimes the part is so tender, that these investigations can scarcely be borne; while, at other times, the patient complains little at the moment pressure is made, but suffers considerably from aching pain in the part for some time afterwards. The tumor thus produced is somewhat resisting, but not indurated; and it gradually subsides, as the general symptoms of inflammation are subdued. Leeches and the assiduous application of poultices, are the local remedies indicated: while bleeding from the arm, mercury with or without opiates, and antimonials, together with free action on the bowels, are the constitutional remedies, which can scarcely be safely dispensed with, where so important an organ, and one so apt to run into suppuration, is inflamed."

Dr. Bright relates no cases of this form of hepatic enlargement. He thinks it more frequent where hepatic inflammation tends to suppuration and the formation of abscess, than when it leads to simple jaundice.

3. *Intumescence of the Liver from accumulation of Bile.*—"A third form of smooth enlargement of the liver is produced, by the bile being retained, so that it accumulates in the biliary ducts. In such cases, the liver gradually enlarges; and may be felt as a tense smooth tumor, descending toward the umbilicus, and proceeding onwards almost to the pelvis, while it nearly fills the right lumbar space. Pressure is productive of some pain, which often lasts for many minutes. In such cases, we are usually directed in our diagnosis by the very decidedly yellow suffusion of the skin; and, in many cases, by a peculiar rounded tumor projecting from the lower margin of the liver. This will, however, depend upon the cause of the detention of bile in the liver. I believe that it very rarely, or perhaps never happens, that the liver is greatly gorged with its own secretion, unless some decided mechanical obstruction exists. When sanguineous distention takes place to a considerable degree, the bile is certainly more or less retained in the small tubes, and produces a jaundiced tinge on the skin: but here the obstruction is only partial, and is not fixed; and the degree of bilious congestion, compared with the sanguineous, is but small.

The circumstances under which I have seen the liver decidedly loaded with bile to distention, so that the bulk of the organ has been enlarged, and manifest swelling produced, have been tumors, or morbid deposits, pressing on the large excretory ducts, or biliary concretions impacted within them. If the obstruction thus produced occur in the hepatic duct, the tumor of the liver takes place, and the organ is distinctly to be traced gradually descending from the margin of the ribs, towards the pubic and the iliac regions, presenting a smooth and even surface. The whole, dull on percussion; and this dulness ascending to the sixth and fifth ribs of the right side. If the obstruction be lower down, occupying the common duct, the same enlargement of the liver takes place; but gradually we perceive the margin of the liver deviating from its even line, and a globular projection protruding itself downwards, of the size of a small egg. This pro-

jecting portion of the tumor yields, on pressure, the elastic feel of a deep-seated fluid: it increases, and becomes more tense, and often seems to project above an inch beyond the distended line; in which case it descends almost to the pelvis, being generally situated somewhat to the right of the mesial line, and on a level with the crest of the ilium. This tumor is the distended gall-bladder. In both these cases, the surface of the body is of a deep yellow colour; but I have suspected that it has not been so deep when the obstruction has been in the hepatic as when in the common duct: of this, however, I am by no means confident; but if it be so, the difference must arise from the change which takes place in the bile after it gets into the gall-bladder, to which, when the obstruction is higher up than the entrance of the cystic duct, it of course never gains access."

Dr. Bright relates an interesting case of *Tumefaction of the Liver from Retention of the Bile*, and then presents us with another, which is short and to the point, and we therefore quote it.

CASE.—Tumefaction of the Liver from Retention of Bile—the Gall-bladder distended with its own Secretion.

In the Spring of this year, Dr. B. was requested by Mr. Holding to see Mrs. T—, the subject of jaundice: but the more immediate object of our consultation was a tumor which had been discovered in the abdomen, and respecting which some diversity of opinion had arisen; though Mr. Holding himself had no doubt as to its nature.

The patient was an elderly lady, between sixty and seventy years of age, who had been affected with jaundice for several weeks. The colour was a deep yellow; the stools were white, or occasionally of a pinkish-white or drab. The urine very high-coloured, yellow, and loaded with lithic deposit. On examining the abdomen by the hand, and by gentle percussion, the liver was traced, of a large volume, going back towards the loins, and descending to the umbilicus. It was smooth and tense, but not hard; and, following its margin towards the right side, and between the umbilicus and the crest of the ilium, a large rounded projection was to be plainly traced; which, in connection with the other symptoms, Dr. Bright had no hesitation in pronouncing to be the fundus of the gall-bladder. The symptoms by which the disease was chiefly marked, besides those already noticed, were anorexia, flatulency to the utmost degree, occasional vomiting, and considerable depression of spirits. Pressure made upon the liver was not immediately very painful, but left a wearing pain for some time after an examination.

No permanent advantage was obtained from remedies, and, at length, the patient sank.

Dissection.—On opening the abdomen, the liver was seen descending below the ribs, and the gall-bladder projecting from beneath it. The gall-bladder was not of dark colour; but was so thin, from long distention, that, while trying to raise it, it burst, and a large quantity of light dirty-yellow glairy fluid escaped. It was therefore obvious that the distention of the gall-bladder depended on something else besides pressure on the common duct; and it was presently found that a biliary calculus was impacted in the cystic duct, so that nothing could obtain an entry into the bladder, except its own secretion;—but this would not account for the jaundice: however, this was also soon accounted for, by the entire obstruction of the common duct by induration of the head of the pancreas.

Dr. Bright remarks:—"One practical point is suggested by the examination in this case. I refer to the caution inculcated by the state of attenuation to which the gall-bladder was reduced. It actually gave way under manipulation; and the same might have happened during life; in which case, peritoneal inflammation would have been almost infallible. And this struck me the more, because I had several times, during my attendance, taken the tumor in my hand, and made gentle pressure upon it as upon an elastic bottle; observing, that if I dared

to make bold pressure, it felt as if I might possibly overcome the obstruction to the duct."

Two other cases of distention of the gall-bladder are related; and the observation is made that, occasionally the gall-bladder loaded with calculi is brought into a state of suppuration; and in this way, adhering to the parietes, forms an external abscess, and the calculi are discharged. In this case a tumor generally presents itself near the margin of the ribs.

4. *Hepatic Tumor from Chronic Hypertrophy of the Organ.*—"There is a state of disease," says Dr. Bright, "into which the liver is very apt to pass, when it has been long over-stimulated by habits of intemperance. The whole structure becomes uniformly changed, so that the appearance it presents is that of a yellow granular substance, like a coarse-grained sandstone; and at one period of the disease the whole organ is greatly enlarged. Whether it sometimes contracts in a later period, I am not quite sure; but if it does, it then passes into a state approaching to the hob-nailed liver: at all events, at the period of which I speak, it forms a large hepatic tumor, of a smooth character; for the granules of which it is composed are not perceptible through the parietes, which are usually, in this form of disease, rather loaded with fat, than reduced by emaciation."

Two cases are given of this affection. We proceed to—

5. *Hepatic Tumor from Fatty Degeneration of the Liver.*—"That very peculiar change to which the liver is subject when its whole substance seems converted into a mass of fat, supported in its form by the usual vessels and cellular membrane, has been known for many years, and has particularly attracted the attention of the French pathologists, who have traced it as connected in many cases with the phthisical diathesis more or less developed. I am not aware, however, that any one had pointed out a diagnostic mark of its existence during life, till Dr. Addison took up the subject, in a communication to these Reports. And to this I must refer; as I introduce the disease in this place only as affording one instance of hepatic tumor; which, however, is not a constant attendant on the disease in its early stages."

We are presented with three cases of the fatty liver. We shall select one.

CASE.—*Fatty Change in the Substance of the Liver.*

A young lady, aged 17, was in apparent excellent florid health in November 1839; except as regarded the catamenia, which came at twelve years of age, and were never regular, being frequently absent for six months at a time; but it was observed that she had grown remarkably stout. In November, she first began to feel pain in the bowels, particularly about the right iliac region. In January, she went to Brighton, on account of a disease which had taken place in the first phalanx of the great toe; and while there, diarrhoea came on to such a degree, that for twelve weeks she never had less than six or eight stools in the day; and she generally experienced a little pain in the right iliac region, and some griping over the whole abdomen.

Dr. B. first saw her on the 17th of July. She was much emaciated, yet the abdomen was not so much so as the rest of the body. Dr. B. could feel what appeared a glandular body, low down in the right iliac region, probably near the head of the colon.—Tongue red, with some elongated papillæ: stomach so irritable, that she vomited almost all her food: pulse, from 100 to 120. He saw six stools which had been passed that morning; most of them were of a remarkably healthy, brown, feculent appearance; scanty, loose, but not watery, with some small lumps in them; and in one or two, might be the treacle-like tinge, which a slight admixture of blood sometimes presents. Dr. B. made trial, in addition to the many remedies which had been already used without success, of small doses—first, of sulphate of copper; then of chalybeates com-

bined with astringents: but the good effects produced were very temporary: and although at one time, on a diet of mixed food not prescribed by her medical adviser, she appeared to lose in a remarkable degree the irritability both of her bowels and her stomach, so that for two days she had neither vomiting nor diarrhoea, yet this apparent improvement passed off; and the diarrhoea returning with increased violence, she died the last day of August.

Dissection.—On laying open the abdomen, the omentum was seen, by no means destitute of fatty matter, spread over the abdomen, and attached at one part in the right iliac region. The liver came at once into view, of a yellow drab colour, and much enlarged: it descended at least three inches below the cartilages of the ribs, and across the whole scrobiculus cordis, quite to the spleen on the left side: it ascended to the interval between the third and fourth rib on the right side, and occupied a considerable space in the left hypochondrium. It was a perfect specimen, throughout, of the advanced fatty liver. The scalp was covered with grease; a portion, on applying heat, yielded drops of fat, and made an oily stain on linen; and a piece of the liver, thrown into water, floated readily. A considerable quantity of blood flowed from the incisions of the liver. The gall-bladder contained about two drachms of healthy bile, and a gall-stone, of the size of a small filbert, of crystalline cholesterine.

The Intestines.—The whole peritoneal covering perfectly healthy, smooth, shining, and free from any effusion: but on following out the course of the intestines, they came, in the last two or three feet of the ileum, to some dark discoloured spots, where the bowel was contracted, evidently corresponding with internal ulceration; and on arriving at the termination of the ileum in the cœcum, the intestine formed a mass of the size of an egg, in which the vermiform appendage was glued with a portion of the omentum to the cœcum. On laying open the intestines, they found about ten separate ulcers in the lower part of the ileum, some of which embraced the whole calibre of the tube; but the chief ravage was about the ileo-colic valve, which was involved in a mass of ulceration, as was the pouch of the cœcum, and the cavity of the vermiform process. The other parts of the mucous membrane were healthy; and the whole lining membrane of the colon was perfect, except one small ulcer about the sigmoid flexure: and in the rectum the membrane was red, but not ulcerated. It was obvious that much tubercular deposit had taken place in the ulcerated patches, previous to their ulceration; for some such deposits lay around them, to which the ulcer had not extended.

The mesentery still contained some fat; and the glands were much enlarged, some of them going into a state of softening and suppuration. One small tubercle was detected in the substance of the right kidney.

The lungs presented some traces of tuberculous matter.

Dr. Bright observes:—"In this case, there can be no doubt that percussion would have yielded a dull sound over an unusual extent of the upper part of the abdomen, as it did in the former case. Indeed, the similarity was so striking, that we ought almost to have inferred the nature of the hepatic enlargement. Such a diagnosis, however, should always be given with caution; although, in a case of decidedly irregular catamenia, with obstinate diarrhoea, and a large smooth tumefaction of the liver, the probability would be greatly in favour of this form of disease; and more particularly before the meridian of life, for I have more than once had reason to believe that the state of amenorrhœa was connected, either as cause or effect, with the existence of fatty liver. It may be a matter of surprise that I did not detect the disease by that state of skin pointed out by Dr. Addison; but in the distressing state in which the patient was, no striking peculiarity in this respect was observed."

6. *Malignant Disease*, for the most part, induces tumors of the irregular form, yet it occasionally happens that it is otherwise, more particularly when the

disease develops itself very generally through the structure of the organ, forming a great number of small and almost confluent tubera, and thus producing an even surface. Of this we have a sample.

CASE.—Malignant Disease producing a regular smooth Enlargement of the Liver.

April 13, 1834. Dr. Bright was requested to see Mrs. S., who had been delivered of a living and healthy child two days previously. The abdomen had scarcely diminished since parturition. On examination, a hard smooth tumor could be distinctly traced, occupying all the upper part of the abdomen; rendering the lower half of the right chest dull, and descending some way below the umbilicus. Although the situation of the tumor pretty plainly pointed it out as the liver; yet some who examined it, finding it pass quite over to the left side, had been inclined to think that the spleen was also involved in the disease. The uterus was also distinctly felt in the pelvis. The skin was sallow: there was no peritoneal tenderness. She continued to get lower, and died on the 10th of April.

Dissection.—About two quarts of yellow serum in the cavity of the abdomen. The lungs were pressed upward by the liver, which, in the recumbent posture, and with the lungs empty in death, had encroached on the chest, as high as the fourth rib. The liver, when the chest and abdomen were both laid open, occupied full half of both the cavities: it spread from one side to the other completely, and extended from the fourth rib to considerably below the umbilicus. It was diseased in almost every part; presenting, on its surface, circular white masses, which were not the least elevated, but rendered the whole mottled with white spots, varying from the size of a shilling to a pin's head, irregularly distributed, but occupying by far the larger proportion of the whole. The peritoneum itself was very little influenced. The gall-bladder contained a small quantity of green bile. Pancreas healthy. Spleen healthy, but large.

HEPATIC TUMORS OF IRREGULAR FORM.

The tumors of this class are, abscesses in the liver, in various conditions; some other results of chronic inflammation; hydatids; and the different forms of malignant disease.

HEPATIC TUMOR FROM ABSCESS.

When inflammatory affections of the liver have gone on to the formation of abscess, it depends entirely upon the situation in which the suppuration takes place, whether it produces a tumor externally or not. In general, however, some enlargement of the liver follows almost necessarily: and if the abscess does not point sufficiently, or if it be placed completely under the vault of the diaphragm, still it pushes the liver down, so that its margin is perceptible some way below the ribs: this produces an even smooth enlargement, rather than an irregular tumor; and usually the dulness of the right side of the chest extends higher than in health. When the abscess is so situated as to point externally, a distinct tumor is induced; sometimes protruding the ribs, and even pointing between the costal spaces; at other times appearing either immediately below the cartilages, or at some distance from them; the situation, of course, varying according as the right or left lobe is affected. A tumor arising from such a cause is easily to be traced as connected with the liver, of which it obviously forms a part; the dulness, on percussion, being continuous, as well as the resistance on pressure. The resistance, however, is not very great, as the whole organ rather gives way under pressure; and the sensation to the touch is comparatively soft, or it yields an elastic tenseness. More or less pain, and that often acute, is experienced when pressure is made; and generally symptoms of an active, febrile, and inflammatory character have preceded the appear-

ance of such a tumor. It must however be borne in mind, that the approach of an abscess in the liver is often so obscure, and so insidious, that the inflammatory symptoms have sometimes not been recognised; or have, if not overlooked, frequently been ascribed to other organs; so that the appearance of the tumor has first suggested the mischief which had been going on. Its progress, too, has often been insidious; and an abscess has become chronic, producing an enlargement of a still more striking kind than I have just spoken of, remaining for months as a tangible tumor, almost defying diagnosis; and at length destroying life, by wearing out the constitutional powers, or by some accidental effusion of the pus into the peritoneal cavity. Still further than this, however,—an abscess of the liver may produce an uneven lobulated condition of the liver, possibly by absorption of the pus; or, more probably, by the escape of the greater part of it through the gall-ducts, and a consolidating change of what remains, which becomes insulated in the thickened cellular membrane. What we then find, is, a deep cicatrix marked on the surface of the liver: and when we cut through this, a yellow deposit, of a more or less purulent character or of a chalky consistence, is lodged at the bottom. Such cicatrices are not matter of doubtful existence, but deep and tangible indentations on the surface of the liver; and though generally concealed from the touch by the ribs, yet if the liver were brought down below the ribs by its own enlargement or by external pressure, the nodulated liver would present a very perplexing variety of tumor, which would most likely be mistaken for malignant disease, till sufficient time had elapsed to prove its comparative innoxious nature, and its little disposition to increase.

Two cases are detailed, both interesting. We regret that we have only room for one, the more curious of them.

CASE.—Deep Cicatrices of the Liver from former Abscesses.

Dr. B. was requested to meet Dr. Budd and Mr. Bell, in the case of a gentleman sinking under the effects of granulated kidneys with albuminous urine. He had made several voyages to India in his youth; but had retired from that service above fourteen years. During his Indian voyages and residence, he was supposed to have suffered from liver disease: and he has always asserted that he was sure his liver was still diseased: one reason for which belief had been, his great tendency to dysenteric diarrhoea, and derangement of the bowels.

Dr. B. was present at the post-mortem examination: and the first thing which drew attention, was the singular appearance of the liver; which was divided by several deep fissures, some of them a full inch in depth, rendering the whole liver irregularly tuberculated. These fissures were the cicatrices of abscesses; and on cutting through them, we found at least twenty small deposits of puriform matter, contained in little cyst-like cavities formed by the induration of the cellular membrane of the liver; and some of these deposits, though apparently locked up in these cavities for several years—for there was no sign of recent action—still retained the character of most perfect recent pus.

As Dr. Bright observes, this case is instructive, as shewing the frequent termination of hepatic abscess, and the way in which the remaining portions of pus may become so insulated as to be productive of little or no inconvenience, locally, or on the system.

IRREGULAR SURFACE OF THE LIVER INDUCED BY CHRONIC INFLAMMATION.

“Under this head I would arrange the numerous cases in which, from contraction of the cellular membrane, the liver becomes deformed and lobulated, either in large proportion, or in that more uniform manner which marks the hobnailed liver. As in this form of disease the liver is generally contracted rather than enlarged, we are frequently deprived of an opportunity of ascer-

taining its state with certainty, though the general symptoms frequently lead us to correct diagnosis. These conditions of the liver are very apt to be marked by the effusion of blood into the stomach and intestines, leading to most severe and repeated hæmatemesis, as was very well pointed out by Dr. Law of Dublin; and also to serous effusion into the peritoneum. It is owing to this last circumstance that we are often led to search for the liver, and to detect it even when its bulk is rather diminished than increased; for as the ascitic patient lies on his back, if the liver be indurated and contracted, it tends to gravitate of its own accord, from its attachments; and thus, falling downwards and forwards, sinks, suspended under a certain quantity of the serum: and thus we find it below the margin of the ribs, so as to be plainly felt. For this purpose the attention of the patient must be drawn away, if possible, to prevent the almost involuntary tension of the muscles; and then, the points of the fingers being placed on the surface, by a quick movement are brought down with the integuments so as to displace the serum and receive the impulse of the liver; and then, taking advantage of a favourable moment, the irregularities of the surface may be felt. Thus I have before me cases where the abdomen is described as loaded with serum, and the liver to be distinctly felt below the ribs; and yet, when the examination was made, after death occurring in a few days, the liver is stated to be rather small, its whole surface granulated, and its texture hard and unyielding.

There are a few other cases of tumors, of a more casual kind, formed on the surface of the liver; as, cartilaginous deposits; and even bony tumors, the result of morbid actions, which are generally not progressive. The possible existence of such tumors should be carefully borne in mind, as pointing out the propriety of abstaining from the use of violent remedies for the removal of any internal tumor, whose stationary condition, and the little effect it produces on the constitution, seem to point it out as less likely to prove injurious than our efforts for its removal, which at length will probably be of no avail."

IRREGULAR TUMOR OF THE LIVER FROM MALIGNANT DISEASE.

Dr. Bright observes that the different forms of malignant disease must be considered amongst the most common sources of hepatic tumor. We frequently find the liver alone the seat of such disease; but, on the other hand, we still more frequently have instances of the successive or simultaneous attack of several organs. When the disease is confined to the liver, the situation of the tumor is most easily ascertained; for as there is no complexity of diseased organs, we are of course less liable to be led into error: but the nature of the disease is often more easily ascertained when other parts are affected; more particularly such as present facilities for external examination, as the mammae, the uterus, or the superficial glands; which are all very frequently implicated, and, being far removed from the liver, afford no room for confusion: and the very circumstance of the organ being involved, strengthens the probability of the malignant nature of the disease. On the contrary, however, the greatest sources of difficulty, as to the situation of the disease, occur when the right kidney, the ascending colon or its arch, the stomach, the pancreas, or the peritoneum, are involved in the same disease with the liver.

Malignant disease varies considerably in the forms it assumes; but in general, when developed in the liver, shews itself as rounded masses or tubera, approaching more or less to the spherical shape. Dr. B. regards the malignant growths as generally originating in the cellular membrane connecting the essential portions of the organs in which they are found; often, at first, merely displacing the structures which are employed in the proper function of the organ, and interfering therefore but little with its duties; but ultimately entering so minutely into these structures, as to effect an apparent conversion, or an obliteration of the whole. Three very distinct varieties present themselves;—cerebriform dis-

case, and that running into fungus hæmatoides; the hard scirrhus; and the melanosis. Or perhaps the hæmatoid form of the disease might deserve a separate place; making, in that case, four varieties.

Of these, the cerebriform, with or without the hæmatoid, is often the most rapid in its growth, and forms the largest and most distinct tumors in the liver: next to that, the melanosis: and the scirrhus, though apt to attack a great many points simultaneously, is the slowest in its progress, and often the least easy to recognise as a distinct irregular tumor.

Dr. Bright relates three cases of Cerebriform Growths in the Liver, which we must pass by, contenting ourselves with only the following note of them:—*that* all three of the patients had been invalids, and suffering from abdominal pains for that length of time, and some with severe occasional aggravations; and in each, the attack which preceded death, and in which the hepatic tumor was first detected, was one of intense pain in the right hypochondriac region. They all died worn out by exhaustion and suffering.

The disease had, in each, shewn itself by tubera of considerable magnitude; and in two, had shewn a tendency to attack the glandular structures about the head of the pancreas and the pylorus: and had not in any case displayed itself by affections of the serous membranes, which we find very common in the most strictly scirrhus form of disease.

The next case is one of Tumor in the Abdomen, from Scirrhus Tubera in the Liver—Peritoneum and other Organs affected.

The next—Liver converted into a Scirrhus Mass, so contracted as to form no External Tumor.—Uterus scirrhus.

We introduce the next.

CASE.—Scirrhus Tubera of the Liver.—Mamma and Ovaria diseased.

Mary Read, aged 45, was admitted, under the care of Mr. Morgan, with scirrhus of the right mamma. She was unmarried, of sallow complexion, and spare habit. Ever since she can remember, even when young, she had a small hard tumor under the right nipple, occasionally accompanied by pain. Menstruation always regular, to the present time. Within the last three years the tumor has increased; with more pain in the part, and derangement of the general health. The breast very hard, moveable, and, in some parts, seems to contain fungoid cysts. There is manifest irregular hardness in the region of the liver; and therefore no operation was admissible.

She shortly became the subject both of ascites and anasarca, and died March 6th.

Sectio Cadaveris.—The liver was seen of great size, and universally pervaded by carcinomatous tubera, from the size of a grain of rice to that of a plover's egg. They all assumed a spherical shape, forming circular spots upon the surface, which, in most parts, touched each other, and in some, pressed each other out of shape, occupying a very large portion of the surface. The circular patches were of a whitish flesh colour, depressed towards the centre, and scarcely elevated at their circumferences, and marked with radiated vascularity, protruding from their centre. They were harder and more elastic than the surrounding liver; but could not be completely separated from it, as their edges, though defined to the eye, seemed to be not only strongly attached, but actually to amalgamate with the liver, as if the morbid deposit were insinuating itself between the acini. The liver itself was rather soft, of a light colour, and some parts stained with bile. The coats of the gall-bladder were about a quarter of an inch thick, somewhat resembling a scirrhus stomach, and very much contracted.

The left kidney had a fungoid growth upon its surface. In the left ovary was a well-marked apoplexy of a Graafian vesicle: in the right ovary, a fungoid growth. The lumbar glands partook of the malignant disease.

The two succeeding cases are samples of Melanosis—the first, Large Irregular Tumor, from Melanosis of the Liver—the second, Melanosis occupying the Liver very extensively; very slight Jaundice before death.

We shall introduce the first.

CASE.—“ December 14, 1839.—I was requested to see a lady affected with a great enlargement of the abdomen. She was a married woman, and had lain-in fourteen months before, at which time the abdomen was not discovered to be diseased; nor was it till eight months ago that the tumor was detected. Within the last week effusion had taken place into the peritoneum. I found her greatly emaciated; her complexion scarcely sallow, certainly not jaundiced. She was as large as a woman near the full time of her pregnancy. On examination, I found a hard nodulated mass, extending quite to the pelvis, and pretty obviously continuous with the liver. The ribs on the left side rather raised, and percussion dull. Examining this extensive tumor as carefully as I was able, I could not satisfactorily account for one or two hardened masses situated in the left iliac region with the liver; and I therefore concluded that the disease had been communicated to the peritoneum or omentum. I entered in my note, that ‘I perceive one black spot, which I consider a small melanotic tuber, under the skin on the abdomen; and I suspect that the disease will be found of that character.’

The swelling increased. The œdema of the legs was so great, that the cuticle gave way. She greatly emaciated; and sunk, exhausted, on the 11th of January: yet within forty-eight hours of her death she had been able to come down stairs and join her family.

Sectio Cadaveris.—On removing the parietes, and opening the chest, the liver was seen, as a black mass, extending from the fifth rib to the pelvis and into both lumbar regions. This was everywhere pervaded by melanosis; in some parts assuming rounded forms, but generally appearing to percolate between the acini, without attaining any fixed form, or being moulded by the cellular tissue in which it was deposited. Mingled with this black matter were many small white tubera of a scirrhous character; and in one part of the convex surface a space of several inches had the appearance of a porphyritic granite, from the intermixture of the white and black. The gall-bladder contained but little bile: a few small melanotic glands on the mesocolon: the spleen and kidneys healthy. A few very small glands pervaded by melanosis were seen buried so deep in the integuments as not to shew themselves on the surface. One melanotic gland on the pericardium: one small one on the heart itself. There was decided melanotic deposit in the cancellated structure of the sternum, about its juncture with the first and second ribs.

The upper part of the lungs was spotted with melanosis, in round spots, not resembling the ordinary pulmonary blackness.”

The last case is an instance of—Extensive Malignant Disease, very rapidly implicating both the organs of the Chest and the Abdomen.

Dr. Bright concludes by observing,—

“The cases and observations which I have thus thrown together, may be considered as forming an outline of one very important class of abdominal tumors; and though many of them would seem to point out the difficulties of diagnosis, yet I trust, as a whole, they may rather serve as an assistance and an encouragement to our endeavours, in this essential pursuit.”

WILLS HOSPITAL, PHILADELPHIA.

REPORT OF CASES TREATED DURING THE MONTHS OF OCTOBER, NOVEMBER, AND DECEMBER, 1839. By ISAAC HAYS, M.D.*

1. *Inability from Partial Amaurosis to distinguish certain Colours.*

Dr. Hays relates the particulars of an interesting case, and makes it the vehicle of some equally interesting observations. We shall merely mention the leading feature of the case.

An unmarried girl, aged 20, had suffered two attacks of cerebral disease, one in the spring of 1837 the other in the winter of 1837-38. After recovery from the first attack, objects for a time appeared to her double. The second attack left her entirely blind, in which condition she continued for four months. After this her sight began to return, and at the period of her admission into the hospital, in February, 1839, she was able to read large print. In May, she came under Dr. Hays's notice.

Whilst examining her at this time to ascertain the degree of vision she possessed, her reply to one of our questions led us to suspect that she was unable to distinguish colours. When asked whether she could see the figure in her dress, which was a calico one with red spots, she replied "Yes, I see the *brown* spots." Our attention thus directed to the subject, we soon ascertained that while she could distinguish forms, even of small size, with accuracy, her perception of colours was exceedingly imperfect. Repeated and careful investigations during this and on several subsequent occasions, satisfied us that the only colours which she knew with certainty were *yellow* and *blue*. Nearly all other colours she termed brown, or hesitated to name, designating, however, their shades or intensity of colour accurately. Thus a deep red she called a dark brown, a bright green a light brown, and a very pale pink a very light shade of brown.

We exhibited to her both by day and by candle light, a number of colours and have them now in our possession with the names she bestowed on them. With the exception of yellow and blue all the other colours were named with much hesitation, and some only after our insisting on her doing so, and she then manifestly named them by guess.

The treatment adopted was that calculated to remove cerebral fulness; and, under this, her sight improved, and with it the ability to distinguish colours. By the end of October, we are told that she distinguishes all the primitive colours readily and names most of the secondary ones as correctly as could be expected from one of her moderate intelligence, with the exception of violet: this last she seems always at a loss to name.

The remarks of Dr. Hays embody most of what is known upon the subject of the inability to distinguish colours. We think our readers will be well pleased if we quote them.

The feature, says Dr. Hays, of most interest in this case is the inability to distinguish colours. This is, we believe, the first example hitherto recorded of this inability having resulted from disease, or been co-existent only with it. As a natural defect, the power of distinguishing forms being perfect, it is not rare. Several instances of this have come under our own observation, and not a few others have been mentioned by writers. Such of these last as have been recorded with sufficient details to furnish data for comparison, viewed in connexion with the case we have recorded, lead to conclusions which it may not be uninteresting to notice.

* American Journal, Medical Sciences, August, 1840.

1. As a natural defect, inability to distinguish colours may exist in different degrees.

2. In the worst degree, the individual is able merely to distinguish shades,—the perception of colour is entirely absent. Examples of this are afforded in the two Harris's, who could distinguish a striped riband from a plain one, but could not perceive the difference between any one colour and another, except as darker or lighter, and in Dr. Elliottson's second case.

3. In the next degree, the individual can distinguish only a single colour, and that colour is always yellow. Thus Dr. Butter states that Robert Tucker knew to a certainty *yellow* only; and it appears that the boy whose case is recorded by Dr. Nicholl was in the same condition. Now it may be called to mind that Mary Bishop states when her sight improved the first colour she recognised was yellow.

It may be mentioned here, as connected with this subject, that we noticed a similar phenomenon in the case of a lady whom we attended for amaurosis in the winter of 1837-8. This patient, who was quite blind, began to recover her sight, and among the early evidences of improvement she mentioned, was her ability to distinguish shades of colour, as the stripes in a Venetian carpet; she could not perceive, however, a single colour. When further improvement took place she stated that she could recognise the *yellow* colour of a large looking-glass frame. A relapse then took place, from which she has not since recovered.

4. We may consider as the next degree of this defect where the individual can recognise two colours only; and these seem to be always *yellow* and *blue*. This is the most common grade of this defect. Examples of it are afforded in Scott, Dalton and his brother, in the case recorded by Dr. Nicholl in the *Med. Chirurg. Trans.* ix. 359; in that of J. B. related in the *Transactions of the Philosophical Society of Edinburgh*, vol. x. p. 253; James Milne, Mr. C., Mr. Troughton, and Dr. Elliotson's first case, and Sir David Brewster's case. Mr. Scott, J. B. and Mr. C. were imperfect in their recognition of blue; in the other cases the perception of yellow and blue seemed complete.

It is remarkable that, whilst all the individuals who belong to this class of cases are able to discern yellow and blue, they cannot distinguish these colours when presented in a state of mixture. Green they do not know—they seem blind to it. They cannot perceive any difference in colour between a stick of red sealing wax and a green table-cover; between the colour of the scarlet fruit of the Siberian-crab and the green of its leaves, &c., &c.

So it was with Mary Bishop: whilst able to detect yellow and blue she could not see the difference in colour between the red roses and their green leaves. It was not until her eye had become sensible to red that she could distinguish green.

5. It seems probable that individuals who are able to recognize *accurately* the three primitive colours, can also distinguish the secondary ones. To future observations must, however, be left the decision of this question. But persons whose perception of red is imperfect do not accurately discriminate the secondary colours.

As the imperfection in vision we have been noticing is a very curious one, it may be allowable here to call attention to some further facts connected with it.

It must be remarked that whilst those who labour under this defect naturally are unable to distinguish certain colours, though of the most vivid kind, they can discriminate any marked difference in *shades* or degrees of colour, and can see minute objects often with perfect distinctness. It occurs in persons whose point of vision is natural, as was the fact in most of the cases on record, and also in those who are far-sighted, as Mr. Nicholl's fourth case and Mr. Colqhoun's second case; and in those who are near sighted, as in Mr. Dalton.

This defect appears often to be hereditary, or at least to prevail in certain

families. Thus Harris had two brothers who were unable to distinguish colours, while two other brothers and sisters, as well as his parents, had not this defect. Scott's father and one sister had the defect; his mother and another sister were free from it; but his mother's brother had it. The former sister had two sons, both labouring under the defect. Scott had two children who were able to distinguish colours. In Nicholl's first case the mother and father and his four sisters were free from this defect, but his mother's father had it. This last had two brothers and one sister; one brother had the defect, the others not. In Dr. Nicholl's second case several of the family were similarly affected. Mr. Dalton had a brother who laboured under the defect, and he mentions that he knows of a family of six sons and one daughter, in which four of the sons were unable to distinguish colours. Tucker's maternal grandfather had this defect; Wardrop states that several branches of a noble family in Great Britain have been remarkable for having it; and we know of a family in this country similarly circumstanced.

We have often noticed that persons affected with cataract, who were unable to discern the *form* of objects, in consequence of the irregular refraction of some of the rays of light and the interception of others, could distinguish generally, very accurately, *colours*. Connecting this fact with the inability to perceive colours while forms could be discerned, as observed in Mary Bishop and some other cases of amaurosis, it occurred to us that we might derive from this a means of diagnosis between the two diseases. Subsequent investigations have not confirmed this idea. The subject may, however, be worthy of a more extensive examination than we have bestowed on it.

We fancy, it is hardly worth while to notice the theories that have been proposed to account for the phenomenon. The most probable is that which places the defect in the sensorium.

NEW YORK HOSPITAL.

SELECT SURGICAL CASES. Reported by GEORGE BUCK, M.D. Surgeon of the New York Hospital.*

We are glad to perceive that our contemporary of New York has devoted a distinct section to Hospital Reports. This is as it should be. If the medical officers of large hospitals, whether in this country or abroad, would publish at stated and regular periods the compressed results of their experience, what a mass of clinical wealth would be diffused throughout the medical world. We would take, however, the liberty of hinting that long cases spun out with diurnal details, and containing only facts that every body knows, are not the sort of hospital report that is wanted. Such disgust rather than attract, and are read neither by old nor young. Select cases and general results are, as it seems to us, what are required. But to the paper before us.

INJURIES OF THE HEAD.

1. *Condition of a Trephine-hole in the cranium, two years after the operation.*

A boatman, aged 22, was admitted Aug. 22, 1837, with compound fracture of the cranium with depression. On the fifth day after the injury, convulsions, chiefly of the left side, occurred, the trephine was applied, many pieces of bone

* New York Journ. of Medicine and Surgery, Oct. 1840.

removed, and the patient relieved. He recovered from the accident, and died two years afterwards of phthisis. The hole made by the trephine was now examined.

The shape of the opening was an irregular triangle with rounded angles, two inches and a half in its largest diameter, and two in its shortest. The external table of the bone was rounded off at the margin of the opening, and the internal, which extended beyond it, remained sharp at its edge, from which a strong tense membrane stretched across the opening and closed it up. This membrane was evidently composed of the pericranium and dura mater, which could be raised from their respective surfaces, and traced as far as the margin of the opening, where they closely adhered to each other; its external surface was rough and shreddy from adhesions to the scalp; the internal smooth and shining; near the centre of the latter surface there was a circular depression of the size of a five cent. piece, with rounded edges, that appeared as though there had been a loss of substance in the dura mater. At this point the convolutions adhered by means of the arachnoid membrane, which was thickened. There were no bony deposits between the layers of the closing membrane.

The following case is not devoid of interest.

CASE.—*Convulsions following an old Injury of the Head; cured by application of the Trephine.*—August 22, 1839. In company with Dr. A. Welch, of Wethersfield and Dr. Fuller, of Hartford, Dr. Buck visited Mrs. M'D. aged 35 years, a person in humble circumstances, who was then recovering from a severe attack of convulsions, for which it had been necessary to employ the most active depleting means. She was pale and feeble, but able to sit up, and had been confined for several weeks. Upon careful enquiry, the following particulars of her case were ascertained. Three years previous, while living in the city of New York, she received a blow in the middle of the forehead from a stone, which stunned her for a short time. On recovering her senses, vomiting came on and continued for several hours. Two or three days after the injury, Dr. Mott saw her and removed two small portions of bone. The wound continued to suppurate for several months afterwards and then healed up. About eighteen months after the accident, she was attacked with convulsions, when far advanced in pregnancy with her third child. Bloodletting with other depleting remedies relieved her, so that she recovered her usual health and went her full time. After a respite of several months she was attacked a second time, and relieved by the same means. She was now recovering from the third attack, which had been more violent and protracted than either of the preceding; during the interval that had elapsed between it and the second attack, she has several times suffered from threatening symptoms, such as flushed face, drowsiness, and torpor, of which she had been relieved by blood-letting. She never suffered from headache, nor referred any uneasy sensations to the seat of the wound. During the attacks, her face and all her limbs were alike convulsed. She was evidently agitated by our visit, and her recollection confused; with the assistance of her husband, however, she was able to make out the order of different occurrences. The cicatrix upon her forehead presented the following appearances; it was an inch and a half in length, in the form of a narrow furrow, with its upper half lying in the median line, and its lower a little to the left of it, and terminating at the eyebrow; it was one-third of an inch in width, one-fourth in depth at its upper half, growing more shallow towards its lower extremity; there was evidently a loss of a portion of the external table of the skull, and the cicatrix of the skin was evidently adherent to the bottom of the furrow. The parts were free from tenderness or pain. The patient as well as her husband, were exceedingly anxious for relief, and willing any operation should be performed that afforded a prospect of benefit.

Our opinion concurring in favour of trephining, Dr. Fuller proceeded to per-

form the operation. A semi-lunar incision was made across the forehead, with its convexity directed downwards, intersecting the cicatrix near its inferior extremity, and extending an inch on either side of it. From the middle of this, a second incision, two inches in length, ascended along the median line: the angles were dissected up, and the periosteum detached from the bone. The first application of the trephine included about half an inch of the upper extremity of the furrow, and the disc removed appeared to be of unusual thickness, owing to increased deposit of osseous matter upon its inner surface. A second disc was removed, joining the first at its lower edge, and including the remainder of the furrow; the thickness of this disc exceeded that of the first, and was nearly half an inch. It was perforated by a foramen that transmitted a vein from the scalp to the sinus; the surface of the dura mater exposed was of a normal appearance. A moderate oozing of blood took place during the operation; but no ligatures were necessary. A single suture secured the angles of the wound in their proper situations, and the edges were kept in contact by adhesive straps. Compresses of lint secured by long adhesive straps, completed the dressing. The patient after the operation expressed satisfaction at the relief it had afforded; her head, she said, felt altogether differently from what it had before. The wound healed kindly by the first intention, and in about a fortnight she resumed her accustomed occupations.

August 31st, 1840. This patient has continued to enjoy good health, without any return of convulsions; though once or twice she has had some threatening indications, which Dr. Welch has relieved by seasonable treatment.

INJURIES OF THE SPINE.

CASE 1.—*Supposed Fracture of the Fourth Cervical Vertebra; Recovery.*

Peter Gilman, labourer, born in Ireland, aged 26 years, of robust constitution and temperate habits, was admitted into the New-York Hospital with injury at the nape of the neck. On the 4th of December, 1839, he was suddenly thrown from his cart, while riding over rough ground, and struck with violence upon the back of his neck, that caused an immediate loss of the use of his arms. He raised himself, however, to a sitting posture, and with the assistance of another person, stood up and walked a short distance, when complaining of weakness, he was put upon a cart and conveyed home. On the way, he entirely lost the use of his right leg, and in part, that of his left. The second day following, this also became powerless like the other. Since the accident, his urine has been drawn off at stated intervals, and his feces been voided involuntarily. He has been bled, blistered, and purged. On admission, the sixth day after the accident, his condition was as follows: No irregularity of the spinous processes of the cervical vertebræ could be felt, nor was any external sign of injury visible on the nape of the neck. Pressure, however, upon the spinous process of the fourth vertebra caused severe pains, that, he said, extended to the fingers and toes. Bending the head forward has the same effect, while rotating it gave him no pain. Paralysis of the lower limbs was complete. He was still able to raise his arm to a certain extent, with a sort of dangling motion, but could not extend the forearm, or flex the fingers; sensation was not impaired. Respiration was calm and easy, and performed without motion of the ribs or concurrence of the abdominal muscles. He was exceedingly restless, requiring his position to be changed every few minutes; his pulse was 64 and good. The urine drawn off at stated intervals was somewhat turbid, but without albuminous deposit; his fecal evacuations were involuntary. Cups to be applied to the nape of the neck.

December 31st. Some improvement had taken place in his symptoms, he had become tranquil, and his general condition quite favourable. It was no longer

necessary to use a catheter; by the aid of pressure with the hand above the pubes, the bladder could be evacuated. There were at times spasmodic twitchings in his lower limbs by which they were drawn up, but he had no control over them by any act of volition.

After this, a gradual improvement in all his symptoms continued, so that in the month of May following, he was able to walk about with the aid of crutches, and to pass his feces and urine in the natural manner. A seton was kept open on the nape of the neck, and frictions with stimulating liniment employed daily, over the body and limbs. At the time of his discharge, in the following month, he was able to walk with a cane only, and was continuing to gain strength gradually.

CASE 2.—Fracture of the Second Lumbar Vertebra, without Paralysis.

Daniel Wilson, born in Wales, aged about 37 years, of very intemperate habits, was admitted into the hospital in a state of delirium tremens, which continued several days, until 24 hours before death. Nothing could be ascertained respecting the nature of the injury he had received, nor was its extent suspected until he recovered his reason sufficiently to make it known himself, when it was ascertained that, several days before his admission, he had jumped from a garret window 40 feet in height, in a fit of delirium. His right foot and ankle bore marks of contusion, and the extremity of the fibula was broken off. Before he regained his reason, it was impossible to keep him in bed; he was constantly going about the premises. After this, however, he began to complain of great pain, and soreness in moving his body, and as he lay in bed, his head was thrown far back. On examining his back, the spinous process of the second lumbar vertebra presented an angular projection; pressure upon it gave no pain, nor did paralysis exist.

On dissection, blood was found extravasated between the folds of the mesentery and into the muscular and cellular tissue, covering the lumbar vertebrae. The body of the second vertebra was broken into fragments, the first and third were uninjured; the membranous sheath, as well as the enclosed cord, were sound.

CASE 3.—Fracture of the Skull, and of the Second Lumbar Vertebra, without Paralysis.

Q. D., was admitted December 20th, 1830, into Ward No. 4, of the Marine Department. He had been knocked down in the evening by a carriage running against him. Several contusions of the scalp existed, besides a deep wound of an inch in length, in the axilla, from which there was but little hæmorrhage. The following morning, having recovered from intoxication, he complained chiefly of his back, and referred his pain to the lumbar vertebrae. There was no appearance of external injury or displacement; pressure did not much increase the pain. He was able to move in any direction, and even walked about the ward till the day he died; his face was flushed, and at times he was delirious. He was exceedingly averse to allow any thing to be done for him. At 11 o'clock, the third night after the injury, he was seized with a fit, and five hours after died.

Dissection.—There was a crack in the skull running from the vertex on the left side to the foramen magnum. The whole surface of the right hemisphere of the cerebrum was covered with a layer of coagulated blood, thickest over the inferior surface of the middle lobe, where the convolutions were softened into a pulaceous mass. The veins of the pia mater upon both hemispheres were loaded with blood. The second lumbar vertebra was fractured across the body. The anterior vertebral ligaments remained entire, excepting on the left side, where a small spicula of bone had obtruded. The cellular and muscular tissues around were infiltrated with extravasated blood.

IMMOBILITY OF THE LOWER JAW. DIVISION OF THE RIGHT MASSETER MUSCLE.

Case.—John Bishop, aged 19, August 19th, 1839. About 18 months before, he had had an attack of fever at the south, during which he was profusely salivated, and sloughing of the right cheek had occurred, with loss of considerable portions of the soft parts from the inside of the mouth. On recovery, he was unable to open his mouth, a band having formed, by which the jaws were kept firmly applied to each other. Unsuccessful attempts had been made to relieve this condition by dividing the constricting band, but without using means, at the same time, to force the jaws apart. Two portions of bone had been discharged.

The right cheek was full and swollen, the skin and subcutaneous cellular tissue supple and movable upon the masseter muscle, which could be felt contracting under the hand, whenever he put it in action. In a state of rest, this muscle felt hard and tense. On the inside of the cheek, a firm callous band extended from above the interval between the first and second upper molar teeth on the outside, to below the first molar tooth of the lower jaw, with a sharp unyielding edge, that would not permit the end of the finger to be insinuated between it and the outer surface of the teeth. The jaw was susceptible of a sliding motion, showing that the right temporo-maxillary articulation was movable. The upper dental arch stood a little in advance of the lower, barely allowing the blade of a table knife to be introduced between them. His voice was very little affected. He was able to take solid food by cutting it very fine, and insinuating it between the upper and lower teeth. His general health was pretty good, and he had observed no change in the condition of his jaw for a year past.

Operation.—A bandage of two fingers' breadth, and fifteen inches in length, was insinuated between the upper and lower teeth, and the ends tied so as to form a loop below the chin. One assistant held the head firmly, while another acted on the lower jaw, by means of the bandage, bearing down so as to put the band to be divided on the stretch as much as possible. The fore finger of the left hand was then introduced under the cheek, and the nail insinuated between the edge of the callous bridle and the molar teeth, to serve as a guide for the knife. A narrow bladed scalpel was employed, care being taken to avoid cutting near the middle of the masseter muscle, in order not to involve the parotid duct. Successive incisions from within outwards, and advancing from before backwards, guided by the sense of touch alone, were made on a level with the lower molar teeth, until the finger arrived at the last tooth; resisting bands were felt still farther back and were divided. By repeated attempts with instruments that acted as levers in prying the teeth apart, sufficient space was obtained to introduce the speculum oris, which acted with great effect in rupturing the fibres which still bound the jaws together. Proceeding cautiously, in this manner, alternately prying and dividing the resisting bands, the jaws were separated so as to allow two fingers to be placed edgewise between the incisor teeth. The whole width of the masseter muscle was involved in the incision, and in some parts its whole thickness; the knife grating as if cutting through cartilage; the hæmorrhage was moderate, and ceased spontaneously. After the operation, the patient could himself open his mouth to the extent to which the teeth had been separated. A denuded bony surface was felt on the outside, a little behind the last molar tooth, and could be traced upwards to a rough pointed extremity, which was somewhat movable. A wooden wedge was introduced between the molar teeth of the opposite side, and required to be kept in as much of the time as it was possible for him to bear it. Considerable swelling and

inflammation succeeded, the following day, and continued for some time. The use of the wedge was persevered in.

After this the speculum was perseveringly employed, in order to effect dilatation of the mouth, and several bands were divided. The result was that, in March, 1840, his condition was as follows:—The right cheek is much less swollen than it was before the operation, and is soft and supple; the masseter feels hard. The forefinger can be introduced edgewise between the incisor teeth, and within these limits he has free use of the jaw, and perceives no tendency to farther contraction. The callous band on the inside of the cheek, exists very much in the same condition as before the operation, excepting that it does not advance as far forward.

The operation, then, succeeded only partially.

EXOSTOSIS ON THE UPPER SURFACE OF THE LAST PHALANX OF THE GREAT TOE, CURED BY EXCISION.

Case.—William Jewell, a seaman, born in Norway, aged 20 years, of robust and healthy constitution, first noticed this disease, for which he sought relief, about fourteen months prior to the 25th of September, 1839, the date of his admission to the hospital. At that time, after walking a great deal in a pair of tight new boots, he observed a small hard lump growing under the edge of the nail of the left great toe; by keeping it paired down close, he suffered little inconvenience. It had been partially excised, together with a portion of the nail, but had grown out soon after. At the time of the operation, to be now described, the toe presented the following appearances: From beneath the anterior edge of the nail, which was cut very short, a small tumor of the size of a split pea protruded, of a reddish-gray colour and tough firm consistence, but not apparently bony at its apex. It gave him no pain, excepting when he neglected the precaution of wearing an easy shoe. From the situation of the apex at the anterior edge of the nail, I supposed its base did not extend so far back as to make the removal of the whole nail necessary, and therefore proceeded, with the view of saving the matrix of the nail. After having been previously softened in hot water, and scraped thin, an incision was made across the nail with a straight narrow bistoury, a line and a half anterior to its root, and carried perpendicular to the surface of the bone beneath. Instead of reaching beyond the base of the tumor, as was intended, the knife passed into it. It was, therefore, necessary to repeat the incision at a more remote point, which was done in the same manner, two lines beyond the root of the nail, so as to include the matrix. On coming down upon the bone, the edge of the bistoury was directed forward, and made to graze its surface, thus including the nail, with the tumor at its origin. Its bony nature was obvious in cutting through its base, where the knife met with very great resistance. The surface from which it grew was shaved down, below the surrounding bone, until it had a healthy appearance. The resistance of the nail, perhaps, had determined the growth of the tumor forwards, by which Dr. B. was led to the opinion that it took its origin nearer the extremity of the phalanx. There was very little hæmorrhage, and the wound healed kindly under the application of simple dressings, and nitrate of silver occasionally, to repress the exuberant granulations. There was no tendency to a reproduction of the diseased growth at the time of the discharge, October 21st, 1839.

DIVISION OF THE SPHINCTER ANI FOR ULCER OF THE RECTUM.

Case.—In a case of oblong ulcer of the rectum, on its posterior wall, with

raised edges, of long standing, and productive of severe symptoms, the following operation proved successful.

The patient was placed on his left side, with his hips at the edge of the bed, and his thighs drawn up. The nates being stretched apart, the index finger of the left hand, smeared with lard, was passed into the anus, and upon it a probe-pointed bistoury, flatwise; the edge was then directed towards the ulcer, and in withdrawing it, was made to divide the integument, and subjacent sphincter, by an incision of an inch in length. The hæmorrhage was moderate, and ceased spontaneously. A greased tent was laid in the incision, and a compress upon it was secured in place by a T bandage. The bowels having been freely evacuated, before the operation, very low diet and confinement to his bed were enjoined, for the purpose of preventing, as long as possible, his going to stool.

MISCELLANIES.

MR. WARBURTON'S MEDICAL REFORM BILL.

We insert, from the *Lancet*, the principal clauses of this embryonic Bill. The objections to it are not trivial, and appear to be generally felt.

"A Bill for the Registration of Medical Practitioners, and for establishing a College of Medicine, and for enabling the Fellows of that College to practice Medicine in all or any of its Branches, and hold any Medical Appointments whatsoever, in any part whatsoever of the United Kingdom."

Passing over definitions, &c. we proceed to the Clauses, which declare as follows:—

II. The costs of administering the Act shall be paid by an annual tax of [*blank in the Bill*] on every registered or unregistered medical practitioner in the United Kingdom, according to the provisions of the bill, forming the fund of a "Medical Registry Account." Any deficiency to be specially supplied by Parliament.

III. From and after 1842, registers of all persons practising medicine (in chief) in England, Scotland, and Ireland, shall be made and kept by three persons, nominated by the Secretary of State for the Home Department, whose offices shall be respectively situated in the three capitals, having the registrars of births and deaths throughout England, certain schoolmasters in Scotland, and officers of the police in Ireland, as sub-registrars.

IV. V. These clauses describe the duties of the sub-registrars, and require the medical practitioner to supply to them a schedule of name, address, branch of medicine, and nature and dates of his qualifications; "but," says the clause, "if he do not hold a medical qualification, then whether it is as being a chemist and druggist that he practises medicine in chief," and if under the Apothecaries' Act, or a right acquired by usage before that Act was passed; "or whether he practises medicine in chief without either holding a medical qualification or being a chemist and druggist." Each partner in a firm to do the same.

VI. VII. VIII. All this to be signed, returned before the 1st of April, 1843; or if no blank schedule to be filled up has been sent to the party by the sub-registrar, then the party must, before the 7th of April in every year, apply for one, to fill up and return, the sub-registrar being required to comply with the request speedily afterwards. The period and demand for such returns from medical practitioners are to be publicly advertised also. These returns are to

include the names, addresses, and qualifications of "parties who practise medicine in chief in their capacity of chemists and druggists," as well as "parties who practise medicine in chief, and are not included in the division of persons who hold medical qualifications, or who do not practise in the capacity of chemists and druggists."

IX. The registers are to be printed and published *by the registrars* afresh on the 1st of August in every year, so far as regards those persons who hold what is termed in the Bill a "medical qualification."

X. Permission is given to the *Secretary of State* to publish or not, as he may think fit, the two divisions of persons who "practise medicine in chief in their capacity as chemists and druggists," and those who "practise medicine in chief without being included in either of the preceding divisions."

XI. Any one may reprint registers.

XII. Medical practitioners may "require" any person who has returned himself in a schedule to prove the actual existence of his alleged qualification.

XIII. Persons not holding a "medical qualification" shall not hold any medical office in any public institution, or any district, parochial or otherwise, benefit society, or in either of the public services.

XIV. XV. XVI. The registry of a person to commence with the date of his "return." Changes of residence to be notified to registrars, and announced in supplements to the registers.

XVII. After the 31st of July, in the year 184—, *it shall not be lawful for any unregistered person, "even although he hold a medical qualification, to act as a medical practitioner in any part of the United Kingdom, any custom or thing contained in any statute, charter, gift, grant, or deed, or any by-law, regulation, or statute of any corporate body, to the contrary notwithstanding."*

XVIII. The possession of a "medical qualification," by a person whose name shall appear in the registers or supplements, which *the registrars* are to be required by law to publish, shall render it lawful for him "to make any reasonable charge for any time he may have employed in professional attendance on any patient in *that part of the United Kingdom in which he is registered,*" and therein to sue for the same.

XIX. "Three medical councils, one for England, one for Scotland, and one for Ireland," shall be constituted, each to consist of 36 councillors, of whom, 12 shall be non-medical men "nominated and appointed" on the 1st of Oct. 1843, by the Secretary of State for the Home Department for the time being. Of these 12, there shall 3 of them annually, on Oct. 1st, vacate, at the bidding of the Secretary of State, their office, to be replaced by 3 other non-medical men, similarly nominated. The 24 other councillors shall be elected by those registered "medical practitioners in each respective country who hold a medical qualification," and shall be chosen, exclusively, from among the qualified electors themselves. The first of these elections to take place in the middle of September, 1843, and the registrar of each country to be on that occasion the scrutineer of the election. For the year 1844, the scrutineers to be chosen by voting-papers, by the electors, from amongst the electors. The 24 councillors to be elected in a similar manner. The voting-papers to be prepared by the registrars, and circulated by the sub-registrars, to be filled up by the electors, severally, and returned, sealed, to the sub-registrar, to be by him conveyed by post to the registrars in the respective capitals of each country, the votes of the electors to be kept secret by the registrars, they each reporting to the Secretary of State on whom the choice of the electors has fallen.

XX. Of these 24 elected medical councillors, 6 shall annually, on each 1st of October, vacate their seats, by decision of the said medical electors pronounced a fortnight previously; and who, from amongst their own body, shall replace those 6, the metropolitan registrars, and the previously elected scrutineers, pre-

siding in each capital at the estimate of the votes, having on the 1st of August before, named an umpire between them. (This clause also directs that the 36 councillors shall indicate by lists, to the electors before each election, which 6 of the medical councillors they would "recommend the electors to cause to vacate," and whom "to elect, as six new councillors;" but that the electors may either reject or comply with this "recommendation" as they may think fit.)

XXI. The three metropolitan councils each to elect its own chairman, by ballot, annually in October. At meetings of the councils, 6 to form a quorum. Decisions therein to follow the majority of votes. Minutes of their proceedings to be kept, printed and circulated amongst themselves and the other metropolitan councils, and open to a senate hereinafter mentioned, and the Secretary of State.

XXII. Of these three councils of 108 persons, 12 members are to be annually chosen from each council to form a united *Medical Senate* of 36 persons. Of each 12, four persons are to be chosen from the non-medical division.

XXIII. This "Medical Senate of the United Kingdom," is, on the 4th of October in each year, in and after 1842, to meet in London, at a place named by the Secretary of State, and choose annually a president. Its proceedings to be conducted like those of the councils.

XXIV. V. The senate may make by-laws, to be laid before Parliament, for its own regulation, and to be binding also on the aforesaid councils, "and on all fellows and matriculated students of the college hereinafter directed to be founded, and on all the examiners appointed by the said several councils, and on all the officers and servants of the senate or of the said several councils."

XXVI. VII. The councils may make regulations for giving effect to the by-laws of the medical senate; which regulations, however, the senate may subsequently disallow.

XXVIII. The senate may attend all meetings of the councils, and take part in their discussions; or attend the courts of the "Examiners."

XXIX. There shall be founded a "College of Medicine of the United Kingdom." Its "first fellows" shall consist of all the elected medical councillors of Oct. 1, 1843; and its future additional fellows shall be constituted of the like councillors for other years, all to be fellows for life; together with such other registered persons, possessing "medical qualifications," as the senate may, by by-laws made by the senate, pronounce to be eligible for election as fellows of the said college.

XXX. This senate shall, on commencing its duties, make by-laws to define what "medical qualification," possessed by a medical practitioner, shall entitle him to claim to be a fellow of the said college, without subjecting him to an examination in medicine. The before-mentioned councils shall "make regulations for carrying such by-law into effect;" and when any person so qualified shall apply for admission to the fellowship, the said council shall ballot for him, and reject or admit him according as the majority of their votes may decide.

XXXI. Persons not already in medical practice may be admitted to the fellowship upon examination, as follows:—The said senate shall make by-laws to define "the examinations, to which all persons claiming to be entered in the books of either of the councils, as *matriculated students of the said college*, shall previously to their being so entered, be subjected," and the *age* they shall have attained, and "touching the *course of instruction* to be pursued by students subsequent to their matriculation, and touching the *medical institutions and schools*, corporate or unincorporated, in the United Kingdom or in foreign parts, which shall be deemed *competent for the instruction of students in medicine*; and touching the *registration* of matriculated students during their course of instruction; and touching the *age* which persons admitted to examination for the fellowship of the said college shall be required to have attained;" and touching the *examiners* whom the several councils shall have appointed, and touching the times and modes, and subjects of medical examination. And the senate may "relax the

rigour of such by-laws in favour of those students whose course of medical instruction may be advanced towards completion when those by-laws first come into operation." The *councils* are to *appoint the examiners*, who are to "examine persons claiming to be entered in the books of the council as matriculated students of the said college." And also appoint the examiners of candidates for the fellowship of the said college. The examiners are to report to the council what candidates they pass, and then such candidates shall be entered or admitted as matriculated students or fellows, as the case may be.

XXXII. The senate may empower each of the council "to ballot for the *expulsion from the college* of any fellow thereof domiciled in the country to which such council belongs, who may have been tried for and found guilty of committing any infamous crime or offence."

XXXIII. Any fellow of the college may, at his own request, be examined by direction of the senate, as a candidate for a certificate from the council, certifying his proficiency in medicine, or surgery, or midwifery, or pharmacy, or some other special branch of practice.

XXXIV. No councillor can be an examiner.

XXXV. It shall "be lawful for every fellow of the said college to practise as a surgeon-apothecary, or general practitioner of medicine, in any part whatsoever, of the British dominions;" or in the same capacity to any hospital, gaol, union, society, or other public place or body; and to "compound and dispense any medicine he may prescribe for his own patients," any where; and to sue for charges for medicine, operations, or attendance; and to receive any number of pupils or apprentices; and every such fellow shall be entitled "to all exemptions from serving on juries, inquests, &c. and all other exemptions to which surgeons or apothecaries are already entitled."

XXXVI. Fellows of the said college "who shall have received from any such council a certificate" of his proficiency in medicine, and "who shall also be a graduate in medicine in any university in the United Kingdom," shall, in addition to his other before-mentioned privileges as a fellow of the said college, "be also entitled to practise as a physician in any part of the British dominions, and to act as a physician to any hospital," &c. "or, after undergoing such examination as any duly constituted medical board may deem requisite, may serve as a physician in the navy or army, &c. and be entitled to every already existing privilege of a physician."

XXXVII. This clause makes a similar declaration with regard to *surgeons*, who are fellows of the said college, giving them, on obtaining an examination, a certificate of proficiency in surgery from one of the said councils, and already possessing a surgical qualification from some other college, or faculty, or university, entitling them to "act as surgeons in any part of the British dominions."

XXXVIII. The same as regards a fellow of the said college who may have received from one of the councils a certification that he has, on examination, "been found to be proficient in the art and business of an *apothecary*;" if, also, he be "a member, or licentiate, or certified proficient of some society of apothecaries of the United Kingdom, or of the faculty of Physicians and Surgeons of Glasgow, or of the Royal College of Surgeons of Edinburgh." Such apothecary may act as an apothecary anywhere in any part of the British dominions, &c.

XXXIX. "Fellows of the college who have received a certificate of proficiency in *midwifery*, may act as *surgeon-apothecaries*, or, if they be graduates in physic, as *physicians to any lying-in hospital* in any part of the British dominions." (*Marginal note.*)

XL. Fellows of the college who have received a certificate of their knowledge of the treatment of *lunatics*, may act as surgeon-apothecaries, or, if they be graduates in physic, as physicians to any lunatic hospital or asylum in the British dominions.

XLf. The senate may, if they think proper, under by-laws, purposely made by them, exempt any candidate for the fellowship of the college from the examinations, or from any part of the examinations, which such candidate would be liable to undergo before admission, if that candidate have already acquired "a medical qualification" in the United Kingdom, or a degree in medicine in some university abroad, of which the said senate may approve. The council to which he may apply shall then ballot for the admission of the said candidate.

XLII. Chemists and druggists may voluntarily apply to be examined by examiners named by the said senate. Their examination, "shall relate to the Latin language, the interpretation of prescriptions, the pharmacopœia, the articles of the materia medica, the quantities of different simple or compound medicines which may safely be administered to patients, chemistry, practical and pharmaceutical, and botany." To every person passing this examination the council shall grant a certificate of proficiency therein; and if such person desire a registrar to register him in a certain annual list of certified chemists and druggists, he shall be so registered. And "any person so certificated shall be entitled to carry on the business of a chemist and druggist in any part of the British dominions." And "if any person so certificated shall carry on the business of a chemist and druggist in any town, the population of which" amounts to — inhabitants, then "the laboratory or shop of such person shall be approved of as a school for pharmacy by each of the said medical councils."

XLIII. Every student "shall be deemed to have completed a proper course of instruction in pharmacy," who shall have attended such laboratory or shop, as above-mentioned, or any apothecary's or hospital, or medical practitioner's shop or laboratory, *recognized* by the medical council of the country, during a continuous period of not less than — years or months; a longer or shorter period for either kind of shop or laboratory as the by-laws of the said council may demand.

XLIV. The said senate may prepare and publish a national *pharmacopœia* for the use of all medical men.

XLV. All *medical assistants* in England, Scotland, and Ireland, to be *registered* from January 1, 1845, by means of a form, to be called "The Medical Assistant's Notice and Schedule," recording their name, age, address, medical qualification (if any), and those of the medical practitioners to whom they may be assistants. And when the annual registers of the medical practitioners of the country are published, those registers shall respectively contain, in juxta position with their names, those of the medical assistants whom they may severally be at that time employing.

XLVI. All *medical students* in the United Kingdom, who intend to obtain, by and by, a "medical qualification," are to be *registered* by the parties with whom they may be apprentices or pupils,—dates, ages, family domiciles, the hospitals, or medical schools they may be attending in that twelve months; the specific courses of lectures and demonstrations they may be attending: the name of every professor, lecturer, demonstrator, and the date and duration of their attendances on the instructions of those persons; and all professors and teachers in every university, college, school, hospital, or dispensary, in the United Kingdom where medicine is taught, are to assist by the registrations of their pupils in rendering this registration of pupils and their studies complete.

XLVII. No part of any course of medical instruction, excepting that for which a student shall have been *registered*, shall be allowed by the senate to qualify the student for *admission to examination*.

XLVIII. If any medical student be *studying* "in foreign parts," with the intention of becoming a candidate for examination as aforesaid, "no part of any such foreign course of instruction shall" qualify him to be admitted to such examination, unless he *once a quarter* sends notice thereof, with full particulars (certified by the foreign teachers), to one of the registrars at home.

MEDICAL REFORM.

WE have inserted two Bills, which will shortly be brought before the Legislature. Most persons seem to think them impracticable. Mr. Wakley promises another. The difficulty is, that we do not start *de novo*. There are Colleges in esse, with funds, interests, influences, and an actual state of medical society created by them, to contend with. Yet Reform is fermenting in the minds of the profession, and Reform there must be. If the Colleges remain, there are things that probably will not—self-election—irresponsible application of funds—heterogeneous and clashing regulations—local privileges jostling with each other—apprenticeships. These are contrary to the spirit of the times, and neither by force nor art can they very long endure. If the Colleges survive, which, with proper alterations, we believe they may, it becomes a question, whether there should not be some general presiding body, independent of the individual collegiate corporations, and calculated to ensure their future co-operation and consistency. Difficult as it may be to effect this, it will, perhaps, be more difficult, under existing circumstances, to effect any thing beyond this, and, indeed, the Bills of Mr. Hawes and Mr. Warburton seem a practical confession of that difficulty. It is hard to suppose that with those gentlemen's political opinions, they would not have attempted more, if more had appeared to be attainable.

The complicated registrations with which we are threatened would saddle us with expense and harassment, and would expose us to the chicaneries of law. King Log would shortly be King Stork, and our actual rather speculative and political evils would become direct, personal, and social ones. What we want is a well-considered extension of our own, old fashioned, English custom of self-government. What is attempted to be put upon us is a *tertium quid* between it and centralization. The Government are to have a thumb in the pie—and the lay-people (what are they to us?) are to have another—and we are to put our fingers in;—and a pretty pie it would be! We believe we are uttering the voice of the profession, when we assure the propagandists of this modern political school—something between French and English, with the bad of both—that we do not want them; can do better without them; and their notion of reform is not our's. We would recommend those who are smitten with the centralization passion to read M. de Tocqueville's book. A Frenchman, a profound and original thinker, has utterly sealed its condemnation.

Report says that the Medical Corporations are on the alert, and that meetings have been held with the view of adopting precautionary measures. For our own parts, we would hope that the liberal and enlightened members on the several councils will see the propriety, nay, the necessity of conceding what the state of society and opinion unequivocally demand, and what it must be impossible for any lengthened period to retain. To concede with dignity and promptitude will be to concede with safety; and will tend to prevent that lamentable confusion which will, otherwise, infallibly ensue. We shall be spared such crude and clumsy legislation as Mr. Hawes and Mr. Warburton threaten to inflict upon us.

EXTRA-LIMITES.

PROCEEDINGS OF THE PHRENOLOGICAL SOCIETY AT GLASGOW, IN
SEPTEMBER LAST.

We perceive that this Section has been very active and successful at Glasgow, during the meeting of the British Association. We select a couple of specimens from their proceedings.

" Monday, September 21, 1840."

" The Hall was crowded with ladies and gentlemen.

Mr. Atkinson read a communication from Mr. R. Cull, of London, detailing a case of precocious musical talent, in the history of the *Infant Sappho*, Louisa Vinning. She was born at Kingsbridge, Devonshire, in November, 1836, being now (Sept. 1840) three years and ten months old. Her father, John Vinning, is a good musician: he sings, and plays well on the piano forte and violin, and, having also exhibited his musical talent at a very early period, he was educated for a musician, at the expense of Mr. Garrow. Mr. Vinning has two brothers, of considerable musical talent, who have left their business to make music their occupation. One is a violinist, the other an organist. Mr. Vinning's father possesses a natural talent for music, which he manifested by playing the flute, in the band of a volunteer regiment, for several years. He knows nothing of the technical language of music—he played entirely by ear, and he kept tune and time well.

Louisa Vinning, surnamed by Mr. Parry the *Infant Sappho*, enjoyed music at a very early age. 'She was only nine months old,' her father states, 'when I first observed the intense delight she derived from music: when crying, the sounds of a musical instrument immediately soothed her, her whole frame moving in unison with the measure, and her face beaming with enjoyment. I played to her occasionally on the violin. I took the opinion of several medical men on the propriety of indulging her in this kind of amusement, lest she should be injured by too early excitement. Their advice was, to give her gentle exercise in singing, and to guard against late hours.' She sang before she could speak. Her passion for music increased, until she seemed to require an atmosphere of music to exist.

In the early part of 1839 she was discovered to have walked in her sleep, and, to prevent accidents, she was afterwards put to sleep on a sofa in the sitting-room until the family retired to rest; she frequently sang in her sleep, and, one evening, when only two years and eight months old, she sang, sweetly and distinctly, a melody perfectly new to her father, and repeated it several times, so that he wrote it down, gave it to Mr. Blockley, who arranged it, wrote the poetry, symphonies, and accompaniments, and called it the *Infant's Dream*. Mr. Thalberg, the celebrated musician, in a letter dated 11th December, 1839, speaks of her astonishingly correct singing, and her pleasing voice. Sir George Smart, in a letter dated 3d April, says, 'I beg leave to state that I consider her a most wonderful child, possessing strong feeling for music, with an extraordinary correct ear both for time and tune; her singing is perfectly natural, without effort, and her infantine manners and childish appearance prove her extreme youth.' Mr. Moschelles says, in a letter dated 29th March, 1840, 'she appears to me, not only to be most liberally gifted with a voice of unusual compass, but also with a sensitiveness of organisation, whether as concerns the power of correctly retaining melodies, or of reproducing intervals, very remarkable, being only three years and a half old.'

She sung before the Queen and Court at Buckingham Palace, on 3d August, 1840, and received substantial proofs of the Queen's delight at her talent. She is now singing three nights a-week in the Lecture Theatre of the Polytechnic Institution. She sings the musical *sounds* of the melodies without words; and repeats any Italian air, after hearing it only three or four times. Her style of singing is very remarkable for similarity to our first opera singers. It is appropriately supported by the adoption of the natural language, gesture, &c. to express the sentiment of the air she sings. In her graceful though infantine action she is often very expressive; but, like most public singers, there is commonly a redundancy of action, and that, too, of an exaggerated nature. Her public singing at the Polytechnic Institution commonly comprises the following:—

1. An Italian Air.
2. The Infant's Dream.
3. The proof of her power to sing passages struck on the Piano on the instant, which frequently terminates in some Italian air.
4. Her power of changing the style and key of music without the usual preparation, in which she passes at once from some Italian to an English, thence to a Scotch, and finally to an Irish air.
5. An Italian Air.
6. Finale, part of a harmony in the National Anthem of God save the Queen.

All her talent is natural, for hitherto she has received no technical instruction in music. Her voice is two octaves in compass; the lower notes are very sweet in quality, and she possesses great power of voice. She can introduce occasional sharps and flats with great precision and elegance. When false notes were purposely played to try her, she invariably ceased, and evinced some anger.

She is an engaging child, and, from her elegant movements, is much admired. She has a great talent for dancing also. She is very energetic, her general activity is great, her feelings powerful, and very exciteable. She is self-willed, destructive, very ready to talk, and very arch.

The essay then stated the Phrenological measurements of the head, all of which were very large for a child of her age. She is of dark complexion, dark brown eyes, brown hair, slender form, restless movement of body and eyes, and rapidity of action, which denote great cerebral activity. The temperament is *Bilio-nervous*. The basilar region of the brain is large, but the coronal predominates. The lateral is very large at Destructiveness and Secretiveness. The anterior is also large. The profile much resembles the profile portrait of Clara Fisher. In so large a sized head there are no small organs. Those *very large* are *Secretiveness, Destructiveness, Benevolence, Firmness, Love of Applause, Imitation, Melody, Tune, Comparison*, the others are *large*.

This head is interesting musically as an example of the energetic manifestation of musical talent. It is also interesting as it so nearly corresponds, in its present powers, with the infantine powers of Mozart, Crotch, and Kellner, as quoted in the Phrenological Journal, new series. The case is interesting, as pointing towards a circumstance in the production of precocious talent. Mozart, Crotch, Kellner, and this child, are each offspring of musical fathers; and the two latter of musical paternal grandfathers. Other circumstances also operate as causes, for the offspring of all musicians are not musical, and but few are precocious musicians.

After the reading of the case, some interesting remarks were made by Mr. Atkinson, Dr. Gregory, Mr. De Ville, Mr. Simpson, and Mr. Combe, and several other cases of precocious musical talent were alluded to by the different speakers. Dr. Gregory said it was a great pity that this child should be subjected to such increased activity of brain, which, it was well known to phrenologists, was very

liable to produce disease, and lead to premature death; and Mr. De Ville stated that he had intimated to the parents of the infant Lyra, another musical child, that the exertion of brain to which she was subjected, in consequence of her public exhibitions, would infallibly bring on premature decay; and, as her parents did not listen to his advice, which was agreeable to the phrenological doctrines, the child, by the continued and severe exercise of her brain, fell into disease and died at an early age.

Mr. Simpson then read a most interesting and highly instructive essay on 'the phrenological explanation of the result of a change of treatment of youth, from animal and violent to moral and benevolent, with illustrative cases.' This was listened to with deep attention, and seemed to make a great impression on the audience. Mr. Simpson began by showing how much phrenology had done in introducing and systematising the only education worthy the name—a character-forming, a humanity-improving education—an education which rightly trains and exercises the faculties which phrenology has distinguished as primitive—each faculty upon the objects in nature related to it. He showed that the faculties in activity in one individual rouse the same faculties, by sympathy, in another; and hence the vital importance that the trainer of youth should manifest only those faculties which it is desirable to strengthen in his pupil, and to restrain and repress those which are never called forth, in abuse, but to injure or annoy. The pupil, therefore, should never see the teacher, nor the child the parent, angry, loud, or violent; never insolent and tyrannical; in phrenological language, manifesting *self-esteem*, *combativeness*, and *destructiveness*: but, on the contrary, should witness only justice, kindness, with temperate firmness. *Benevolence*, which is moral power, ought to be the great engine of education. It is power with man and beast. The Arab never strikes his horse—yet the beautiful Arabian, which lives, eats, and sleeps with his master, is the best educated horse in the world. Mr. S. then proceeded to show that the treatment of the young has hitherto been the reverse of all this. It has been commanding, tyrannical, and violent. He drew a picture of the flogging and fagging system, and the cowardly frauds which it engendered in school, and the coarse and brutal, and especially puerile, character it produced in society; witness the police reports of our *adult* school-boys. Some boys either passively or actively resist the violent system, and are pronounced unmanageable. The boy, we may suppose, has been sent from a strict school, as the severe were called, to one still more strict; and he is duly returned from each with an apology, that he defied all authority, and, having arrived at the point of beating and kicking his master, was beyond his management. This unmanageable boy, we shall suppose, is seen by a phrenologist, who discovers an excellent moral and intellectual organization, in connexion with a large animal; and knowing that, while the animal alone has been exercised, the others, especially the moral, have been left in abeyance, he at once declares that the unfortunate boy is a *mismanaged*, not an unmanageable subject. He proposes a complete change of treatment. He addresses himself to the higher sentiments and intellect, no longer excites the low and violent feelings, and soon produces a complete change of conduct. This is not a mere theory, for many examples might be adduced of its practical value. Mr. S. mentioned a gentleman of the most active generosity and beneficence, who at school was mistaken, by those who could not read the better faculties he possessed, for an incarnation of the evil one. He was beaten at school, but always beat again, and was repeatedly sent home as a hopelessly unmanageable boy. Subjected to the old system of '*taming*,' he was found as untameable as the Hyena. Left to himself, his higher feelings began to work spontaneously from their own internal energy; and now they take the lead so perfectly that the animal faculties, which formerly beat his teachers, merely supply energy in the prosecution of his philanthropic views. He is himself

a well-informed phrenologist, and knows the process of his own transformation.

Mr. S. then proceeded to describe two most gratifying experiments made under his own roof—first, upon two young ladies of high rank, at the request of the parents, placed in his family, and educated along with two of his daughters, who were of the same age. The whole process was kindness, confidence, and intellectual guidance, by which a large amount of waywardness and selfishness gradually gave way to the growth of excellent moral sentiments, till the characters were almost metamorphosed. The other instance was that of a youth, now past 16, who, a year ago, presented one of the most unmitigated specimens of all the unendurable faults induced by subjection to the violent method of common schools, and the examples of coarseness and brutality there presented. No school could keep him—no home could endure him—yet this youth is born to a large fortune, and a high rank in society. Mr. S. who is intimate with his parents, invited him to his house a year ago, and giving him line, as the anglers say, for a week, became aware of the domestic nuisance the poor boy thought it manly and *funny* to make himself. In one week, he became so intolerable to the family that there was an urgent and general request to send him home again. Instead of this, a trial of better conduct was deliberately proposed to him, and his powers of succeeding explained. His faculties for good, and the miserable error of his previous education, were all detailed to him. He was enlisted as a principal agent in his own reform, and the change was the doing of a day—so that, for three weeks more that he remained, his manners became quiet, obliging, and gentlemanly. Kind and confiding treatment had great power over him; and treated, on his return home, in the same way, the sudden change surprised his friends as much as if it had been wrought by miraculous agency. It may be believed that earnest application was made for his return to the scene of an experiment so auspiciously begun, if it could be made to suit Mr. S.'s family arrangements. The experiment was too interesting to the experimenter to be declined; and the youth has now been the intimate of Mr. S.'s family for a year; and, subjected to its influences, treated as a gentleman, and allowed all proper liberty and indulgence, he gives ready obedience to the authority of good sense and good feeling; and no more dreams of rudeness, or any form of old school misconduct, than he did of common civility in his former state. The moral command of kindness over him is manifold greater than was ever yet achieved by severity. There is much yet to do with feelings and habits so perverted as his were; but he is already a *comfortable inmate*, and within the range of yet higher moral appliances. Mr. S. promised to report further progress to the Association when it meets again, and stated that he possesses full liberty from the parents to make any use of the case he may think proper, for educational good.

Mr. S. concluded his eloquent and most instructive essay, with stating that he offered this and the other cases, to show that the educational system—based, he was proud to say, on phrenological principles—of which he was a humble disciple and unworthy advocate, is *practical*, and not the mere chimera which its uninformed, prejudiced, or interested enemies represent it. He was called a visionary—he begged to be judged by his practice, not merely in these cases, but in numerous seminaries now founded on his principles. He retorted the title of visionaries on his opponents, who persevered in a system which has produced nothing but evil, and has retarded, and is retarding, the progress of society. Mr. S. warned his hearers that, at the age of 15, the softening and particular influences of a private family, with a subject or two, or a very few, is necessary. No large school can produce much effect on a boy who has had no *infant training*, and all the *mistraining* of ordinary schools. Mr. S.'s subject of experiment was not in the least improved by being placed at a large school, which had even adopted the most advanced views, from which accordingly his parents were requested to remove him.

CASE OF APPARENT EXCEPTION TO THE RULES OF AUSCULTATION OF VALVULAR DISEASE OF THE HEART, WITH EXPLANATIONS OF THE ANOMALIES.

SARAH FRIGHT, æt. 28, a pauper residing in the workhouse of the Thanet Union, had laboured for some years under general debility and local disease of several parts. Her greatest suffering, perhaps, was referred to the uterus and neighbouring parts, and she required the habitual use of the catheter. She complained of almost constant palpitation, with pain in the region of the heart, dyspnoea, occasional though unfrequent cough, and the usual train of thoracic symptoms. Frequent and severe headache; nervous system generally deranged.

About two years ago, she was admitted as an in-patient of St. George's Hospital, where she was for the first time subjected to a competent physical examination. Having been sent up to Dr. Hope, he found a diastole murmur over the aortic valves, with a jerking, though very feeble, pulse; and he therefore gave a diagnosis of *aortic regurgitation*; but, as no other murmur was heard, he confined his valvular diagnosis to this circumstance. On other grounds, *dilatation and flabbiness* of the heart were added to the diagnosis. The signs were not observed to undergo any change during a month which she spent in St. George's Hospital.

From that time I have had frequent opportunities of examining her, and having invariably found the aortic regurgitant murmur to be the only one present, I did not anticipate material disease of any other set of valves. She died October 6th, 1840, after the gradual supervention of dropsy and the other ordinary consequences of cardiac disease. It may be added that the pulse became small, weak, intermittent, irregular and unequal—conditions especially connected with disease of the mitral valve, and also with softening of the heart.

Autopsy.—The uterus was extensively diseased. There were two quarts of fluid in the pleura. *Pericardium* was healthy and without effusion. *Aorta* was natural. The whole *heart* was dilated, soft, and flabby. *Auricles*. Both were dilated and attenuated, the left to a very considerable degree, and their tissue was softened. *Ventricles*. Both were dilated without thickening, and their tissue was soft, pale, and flabby. *Aortic Valves*. Their expansions were thickened and contracted, and their angles adhered to each other over an extent of about two lines, by which, together with contraction of their depth, they were depressed a quarter of an inch below the level of their angular insertions, and the circumference of the aperture was so far diminished as to admit the thumb only. *Pulmonic Valves*, natural. *Mitral Valve*. Its layers, as well as the chordæ tendinæ, were exceedingly thickened by fibrous tissue, and its aperture contracted, so as to admit the passage of one finger only. Its margin was flat and flexible,—not thick and stiff like a ring,—and its shape was an irregular slit. The anterior lamina was thickened, though not shortened, chordæ overlay the orifice so completely and accurately as effectually to prevent regurgitation,—which was, indeed, further proved by the absence of murmur. *Tricuspid Valve* was equally and similarly contracted, but rather less thickened. The dissection was made by me in the presence of Dr. Hope.

Remarks.—This case presents a greater number of exceptions to general rules of valvular auscultation than I have seen, or found recorded, in any other single instance. Dr. Hope has, in his work, pointed out, in different cases, all the exceptions alluded to; but neither he nor any other writer, to the best of my knowledge, has met with so considerable contraction of the aortic orifice constantly unattended with murmur.

I shall notice these several exceptions in succession, commencing with those of the auricular valves.

Both these valves, in the case before us, were so contracted as to admit the passage of one finger only; yet they were not productive of diastolic murmur, (i. e. with the second sound, near the apex of the heart.) The same was noticed by Dr. Hope in the parallel case of Christian Anderson; also in those of George Sharpe, Mrs. C——n, and Elizabeth Dennis, in which the mitral valve alone was materially diseased; and he states that, “ever since he has been able to detect aortic regurgitation with certainty, he has found the mitral diastolic murmur to be exceedingly rare,” having hitherto met with it in two cases only, viz. N——, Esq. and John Goff, a case with which I supplied him. He thus converts the previously received general rule of Laennec into the exception, the general rule in his opinion being, that *contraction of the auricular valves is not usually productive of diastolic murmur*. He offers the following explanation of the fact. “Much investigation has led me to ascribe its feebleness (viz. of the diastolic murmur), when it does exist, and its absence in circumstances where it might have been expected, to the weakness of the current of blood flowing during the diastole from the auricle into the ventricle. This weakness allows the blood to pass in silence through the aperture when only slightly contracted; and, when the weakness is preternaturally augmented by debility of the heart, even a high degree of contraction is not productive of sound.”—(*Treatise on Dis. of Heart*, 3d Edit. p. 79.) This explanation is perhaps the only one that can be assigned in the present state of our knowledge, and it is probably the real one. The present case certainly exhibited the circumstances requisite for its application, the patient's circulation being exceedingly weak.

So much for the *diastolic* murmur of the auricular valves: I next proceed to the *systolic* murmur of the same, which was absent in the case before us.

In my account of the dissection I have expressed my belief that the adaptations of the parts of the diseased auricular valves were so accurate and complete as effectually to prevent regurgitation, the margins of the orifice being flat, and the anterior lamina so overlaying the posterior as, by oblique pressure (for these are undoubtedly oblique valves), perfectly to close the aperture. The possibility of this arrangement of parts is so manifest, that it needs no discussion; and I may remark that nothing is more common than moderate fibrous hypertrophy of the mitral valve in cases of hypertrophy of the left ventricle and otherwise, in which we are accustomed to admit, and with propriety, that the valve is efficient. If, then, the valve close, though with a higher degree of disease, it must still be considered efficient as a *closing* valve. It appears to me probable that, in Dr. Hope's case of Mrs. C——n, in whom there was no regurgitant mitral murmur, the valve closed completely, in consequence of the aperture, which only admitted a quill, being in the form of a slit.

But independent of such cases as these, in which it is probable that the valves are capable of closing, there are others, according to Dr. Hope, in which they may be incapable of closure, yet, from mere feebleness of the regurgitant current, not produce a murmur. He says, “When that force (viz. the great force of the ventricular contraction) is much diminished, by softening or by dilatation with attenuation, the murmur may be much more feeble—nay, *sometimes even extinct*. I have, for instance, met with several cases, in which a murmur attended every strong contraction of the ventricle, while the two or three following contractions, so feeble as barely to occasion a pulse, were productive of a valvular click only, without murmur.”—(*Treatise, &c.* 3d edit. p. 77.) But though such cases prove conclusively that mere feebleness of the regurgitant current may cause the murmur to fail, they would cause no obscurity in diagnosis, because nothing less than an almost complete *intermission of the pulse* suffices to weaken the regurgitant current to the degree required: for we see, by Dr. Hope's cases of Christian Anderson and George Sharpe, to which I could add many of my own, that the highest degrees of dilatation and of softening are insufficient to suspend the murmur during *full* ventricular contractions. In all cases, therefore, the

murmur would probably accompany every contraction fully developing the pulse, and this would be sufficient for all purposes of diagnosis.

We may, therefore, dismiss the exceptions to the existence of regurgitant murmurs when the auricular valves are diseased, by the conclusions—1. That when a valve, however diseased, closes completely, it is efficient so far as its closing function is concerned; any evils resulting from simultaneous contraction being a separate question. 2. That where the valve does not close, there will always be a murmur with full contractions, and this will suffice for diagnosis.

I now proceed to the aortic valves. I am not aware of any well-attested case on record, except the one before us, in which there was considerable contraction of the aortic orifice by its valves, without a systolic murmur. Dr. Hope, at page 576 of his work, has referred to the only case within my knowledge that approximates to it. "This (the high key of aortic murmur)," says he, "is well exemplified in another individual at present under my notice, affected with disease of both valves, (aortic and mitral,) in whom there are from two to five beats of the heart accompanied with grating murmur, (mitral,) but no pulse in the radials: then succeeds a stronger shock with a pulse, and a hissing opposite to the aortic valves." Though a post-mortem examination is not attached to this case, there can be no doubt that the hissing murmur was referable to a contraction of the aortic valves or orifice. We have, therefore, such a contraction not producing a murmur whenever the ventricular diastole was feeble; just as we have seen the same to occur, under the last head, in the case of the mitral valve. It accordingly becomes a question whether feebleness of the circulation was sufficient to account for the *constant* absence of murmur in the case before us of Sarah Fright, in whom the aortic valves only admitted the passage of a thumb. In favour of the affirmative, it may be stated that not only was the whole organ dilated, soft and flabby; but that both the mitral and tricuspid valves were so contracted as to admit the passage of one finger only, whence the supply of blood to the ventricles might have been scanty. It is conceivable that this scanty supply, feebly projected by the softened left ventricle, and still further retarded by the constant retrograde pressure of the regurgitant stream, might have passed in silence through an orifice, which, though contracted, was still considerably larger than the mitral aperture, by which the blood was admitted. It is also possible that the infundibuliform shape of the aortic valves contributed to the silence of the passage.

Whether this be thought an adequate explanation or otherwise, it may be stated, independent of any theoretical considerations, that, where the concurrence of so many and so important circumstances as existed in this probably unique case, is requisite to constitute an exception to the general rule, that contractions of the arterial orifices generate a systolic murmur, the exception must necessarily corroborate the rule. To believe otherwise would require a singular share of credulity; nor would less be requisite to imagine that such exceptions would be frequent; or that, when they did occur, they would materially deteriorate diagnosis: for that would generally happen which happened in this case, viz. the associated lesions with their signs would abundantly reveal the leading features of the malady. In the case of Sarah Fright, a stethoscopic examination at once pointed to structural disease of the heart, and to disease that was incurable; faithfully indicated the existence, and one of the seats—certainly the most important—of valvular disease; unveiled the dilatation and softening of the muscular substance; rendered the treatment definite, consistent, and rational; and led to a prognosis which the great instructor, time, has only too accurately verified.

On the other hand, as the notion of infallibility is injurious to cautious research, an exception, however rare, is a salutary check on overweening confidence.

JAS. FREEMAN.

Minster, Isle of Thanet, Nov. 5, 1840.

ON DISLOCATION OF THE ANKLE JOINT FORWARDS AND BACKWARDS; AND ON REPRODUCTION OF BONE AFTER THE OPERATION OF TREPAN. By *James Douglas*, A.M. Lecturer on Anatomy, College Street, Glasgow. (Read before the Medical Section of the British Association at Glasgow, 19th September, 1840.)

It is stated by Professor Samuel Cooper, in the last edition of his invaluable Dictionary, that dislocations of the tibia at the ankle forwards and backwards, are not common; and that during fifteen years Dupuytren scarcely met with two or three cases, though he saw some hundreds of lateral dislocations. I have happened, in my short experience, to see three cases of these accidents, the histories of which I now propose to read to the medical section, shewing at the same time the preparations which were made from two of them.

Mr. Adams, in the Cyclopædia of Anatomy, gives it as his opinion, that no satisfactory example is recorded of luxation of the ankle-joint, without fracture of one or both malleoli. He also doubts the possibility of a *complete* luxation of the tibia forwards, so that the inferior articular surface of that bone shall be entirely in front of the articular surface of the astragalus. He conceives that the more common form of this luxation, or perhaps the only one, is what has generally been called a *partial* luxation forwards; when the tibia does not entirely leave the astragalus. Even this form, as I have already remarked, is so rare, that I have ventured to think that any instance of it may be acceptable to the surgical portion of the Association.

A woman, aged 60, died of cancer of the breast in the Glasgow Royal Infirmary, in the year 1834. She had an unredacted dislocation of left ankle-joint forwards, of two years' standing, which I removed and prepared. The cast which I lay before you was taken from the limb after death. It shews the ankle in a state of complete extension, the toes being pointed down. A deep curve is seen behind, where the tendo-Achillis should be straight; the heel is lengthened, and the fore part of the foot is shortened. The anterior edge of the lower end of the tibia makes a projection in front, and a notch exists below it, between it and the division of the foot. The outer ankle is found in its proper place; but the inner one is seen to be thrown forward about three quarters of an inch.

The following is the appearance of the parts on dissection. I describe them with the foot resting on the sole.

Ankle is completely extended, and quite stiff. Tibia rests about three quarters of an inch further forward than it ought. Articulating surface of astragalus is not visible in front, but is felt far back, under the arch of tibia. Anterior edge of tibia is exactly over the articulation of the astragalus with the os naviculare, and nearly three-fourths of an inch above it; so that a small part of scaphoid cavity of tibia behind still rests on the pulley of the astragalus. The tendon of the tibialis anticus by this means runs in a straight line to its insertion at the internal cuneiform bone, instead of curving forwards. Behind, the astragalus projects so much, that the flexor longus pollicis does not run in its groove on the tibia at all. The astragalus and os calcis are in this position relative to each other, and their posterior ligament is entire. Some additional ossification has taken place on back of tibia, close above the astragalus.

Externally, the external malleolus remains perpendicular in its situation, with its three fibulo-tarsal ligaments entire. A hollow runs obliquely upward and backward from its anterior edge, shewing where a fracture had taken place, the superior anterior portion being thrown forward along with the tibia. Some new bone is deposited on the junction. The peroneal tendons preserve their proper relations.

Internally, the deltoid ligament seems to have been ruptured, though its place is now supplied. The tibio-fibular ligament must have been ruptured,

though the new deposits of bone prevent its state from being accurately ascertained.

Neither Sir Astley Cooper nor Dupuytren has ever seen a dislocation of the tibia backwards from the astragalus, nor has any instance been recorded by any other individual. In the article in the *Cyclopædia of Anatomy* already referred to, a case by Mr. Colles of Dublin is noticed, supposed to be one of dislocation backward; but from the account, I suspect it must have been one of fracture close to the ankle-joint, such as I am now going to describe.

Hugh Macnab, æt. 41, was admitted into the Glasgow Royal Infirmary in July, 1834. Three years before he had fallen through the joists of a new house, upwards of 60 feet, and was struck on anterior aspect of left leg, immediately above ankle, by a plank which fell with him. A fracture above the joint took place, and though he was put up in splints for three months, union was never obtained, and a false joint formed.

On examination, lower portion of tibia, with internal malleolus, was felt attached to astragalus, while shaft of tibia was thrown backward. Considerable doubt existed among the gentlemen who examined the case, whether the fibula was fractured or dislocated. Some thought it was a pure case of dislocation of both bones backward. Leg was three-fourths of an inch shorter than right, and foot seemed very long anteriorly, and very short behind. (See cast.) When he walked, the lower end of the shaft of the tibia pressed against the tendo-Achillis, making it project backward, so as to cause considerable pain. This projection is seen in the cast. The fibula is seen projecting in a similar manner on the outer side. He was thus prevented from working as a labourer, and he insisted on having his foot amputated. The following was the state of the parts as seen upon dissection.

Tibia and fibula (see preparation) are both found to be fractured transversely, immediately above ankle-joint, which remains perfectly entire. Each malleolus remains in its natural situation, with the different tendons lying in their proper grooves. A thin arch of the tibia, not a quarter of an inch in thickness, remains over astragalus, and has formed a ligamentous connexion with its articular surface. Fractured surface has become smooth, and covered with a periosteum.

The shafts of the bones pass backward and downward; their extremities are covered with cartilage, and have received new fibrous capsules, derived from the deep fascia of the leg, in front and on each side of the tendo-Achillis. End of tibia does not rest on the os calcis, but passes backward and downward against the tendon.

In corroboration of the opinion expressed above, that there is no such thing as dislocation of the ankle-joint backward, I may relate a case which Dr. Lawrie has had under his care for some time, and which he asked me to go to see, as an excellent illustration of this subject.

Alexander Laird, æt. 41. Two years and three months ago fell down a coal-pit, a depth of about 20 fathoms, and in addition to other injuries, sustained a compound fracture above right ankle-joint. The wound ran along the inner side of the foot, where a fistulous opening still exists, through which eight pieces of bone have been discharged during the last six weeks. The bones of leg were thrown backward, so that the case was taken for one of dislocation backward, and the injury seemed so severe, that amputation was proposed. To this the patient demurred, and the limb was accordingly put up in splints; but from the unruly and dissipated habits of the patient, could not be kept perfectly reduced. The state of the parts now is as follows.

Toes are pointed down, and leg is shortened, so that he wears a cork sole nearly an inch thick at the heel. There is slight mobility of the toes, but none of joints across foot, or of ankle-joint. Foot is contracted longitudinally, so as to measure nearly an inch shorter than left. Both inner and outer malleoli are in their proper places in relation to foot, but bones of leg lie in a line which

falls behind the ankle-joint. In front there is a hollow, above what appears to me to be the ends of the tibia and fibula, fractured immediately above the ankle. In fact, I consider the case to be one exactly similar to that of which I have exhibited the dissected preparation, and his foot is as like the cast of Macnab's foot as it is possible for the foot of a different individual to be.

It is stated by Professor Cooper in his Dictionary, in both the articles "Trephine" and "Necrosis," that reproduction of bone in the cranium is rare, and that the deficiency of bone is *never* entirely obviated. The portion of the frontal bone which I now lay before the section exhibits a trepan-hole completely filled up with bone.

The man from whom I took this specimen was forty years of age when he died, in consequence of a severe injury received in a coal-pit. While attending him, I observed a crucial scar on his forehead, and felt under it a depression in the bone. He told me that when a lad of 12 or 14, having been engaged in one of those fights which delight the natives of the Sister Island, he sustained a fracture of the skull, and was trephined by a surgeon in Armagh, 26 or 28 years before. On his death, I removed the bone, and found the edge of the trepan-hole well-marked by a regular depression of above two-thirds of an inch, where the trephine had been applied; while below, the depression was irregular, probably from some splintering having taken place in that direction. The bone which fills up the hole is compact and translucent, except in lower part, where it is thickened, and projects a little internally. The mark is exactly in situation of left frontal eminence, which is destroyed by it, and just above the upper termination of the frontal sinus. This preparation of course settles the question of the complete filling up with bone in the affirmative.

TO THE EDITORS OF THE MEDICO-CHIRURGICAL REVIEW.

Kilmarnock, 20th May, 1840.

Gentlemen,

Never having observed any communications from the West of Scotland in your very widely circulated Journal, I have ventured to trouble you with a very brief sketch of a case, in the hope that it may be the means (if inserted) of stimulating some of my professional brethren, in this neighbourhood, to communicate some of those interesting facts and cases, which are not unfrequently presenting themselves to their notice. This, in my opinion, would not only invest the Medico-Chirurgical Review with a greater degree of interest to readers in this part of this country, but, if duly followed up, would lead to a more careful observation of facts, as well as extend to a wider sphere the benefit of many a long and extensive experience, which would otherwise be entirely lost. By giving the case which here subjoins, a corner in your excellent Journal, (if it seems worthy of that honour,) you will very greatly oblige,

Gentlemen,

Your most obedient servant,

JOHN THORNTON.

Mrs. M'A., æt. 31, the mother of four children, one of which she was still suckling, applied to me on the second day of April last, about what she considered a hernial tumour. She said she observed it first about eight years ago, and it was then no larger than a common garden bean. Since that time it had gone on gradually increasing in size. For the first four or five years it had not given her very great inconvenience, but now it had acquired such a size, as to have become extremely troublesome, preventing her in a great measure from walking or even from sitting with any degree of comfort. On examination,

instead of hernia, I found it to be one of those large adipose tumours, which are not unfrequently found attached to various parts of the body. When handled it felt soft and elastic, but when more firmly pressed, a large hard and knotty body was felt in the interior. Its attachment extended from the symphysis pubis, downward along the whole labium pudendum on the left side as far as the anus. The tumour was quite moveable in all directions, and was evidently connected only with the cellular membrane underneath. When she stood upright it reached within four inches of the knee. It measured 12 inches round the base and eighteen round the apex. When out of bed she always kept it drawn up between the nates, and secured it there by a T bandage. On the 12th April, with the assistance of Dr. Paxton, I excised the tumour, which was contained in a capsule of condensed cellular membrane, and was completely dissected out without much difficulty. The hæmorrhage, which was chiefly venous, was considerable, in consequence of some large veins intersecting the tumour at its base. The urine for the first week was regularly drawn off by the catheter, and the wound, at the end of a month, was all but cicatrised, the patient expressing herself highly gratified at the removal of such a troublesome appendage. The growth, when laid open, appeared to consist entirely of adipose matter, and the hard body which was felt in its interior on firm pressure arose from a condensation of its internal structure.

The necessity for surgeons being minute in every instance with their examinations, is amply attested by the present case; no fewer than three different practitioners having been applied to, each of whom in their turn pronounced it to be hernia. This, in a great measure, may be accounted for, from the backwardness of the patient in allowing a scrutiny of a sufficiently precise nature to be instituted, as well as from the situation of the tumour itself. Had the true nature of the excrescence been properly ascertained at an earlier period of its history, she might have been saved from several years of great and distressing annoyance, as well as much of that pain which she must have endured during an operation for a large instead of a small growth.

A short time ago I assisted in the removal of a tumour of the same adipose structure, from the body of a female. Its base extended from the top of the dorsal vertebrae, over the top of the right shoulder, reaching almost as far round as the sternum. It had been four years in reaching this size, but during the last six months it had made such rapid progress as to have alarmed the patient. Had this case been neglected as the former one, it is impossible to say to what an extent it might have gone, and the difficulties that would have presented themselves in the removal of a tumour with such a wide-spread connexion, would of course have become greatly more formidable. A tumour of this description is generally unattended with pain, so that the patient is seldom led to make application about it until it has either begun to create annoyance from its bulk, or to create suspicion from the rapidity of its growth. This certainly is the reason, why so many excrescences are allowed to reach the extraordinary size which many of them are reported to have attained, before being subjected to the salutary influence of the knife. But in all cases where early advice is applied for, the patient ought at once to be made aware of the danger of procrastination, as well as of the safety and necessity of a timely operation. Adipose tumours growing from the labia pudenda seem by no means to be of unfrequent occurrence, and on that account they merit the attention more particularly of provincial surgeons. In the eighteenth volume of the *Medico-Chirurgical Review* two cases are mentioned of a similar nature to the one noticed above. The one was suspended from the nates of a lady, but was found also intimately connected with the labium of the same side. It was removed by Mr. Lawrence, and is said to have been twice the size of that gentleman's head, which is reported to be a good one. The other was also attached to the left labium of a female, and was extirpated by Mr. Earle.

BLOODLETTING IN HYDROCEPHALUS.

(To the Editors of the *Medico-Chirurgical Review*.)

GENTLEMEN,—The notice taken of Dr. Davis' work, in the recent number of your able periodical, shows that there is little novelty in either the pathology, or the therapeutics, of the experienced author. The inflammatory nature of acute hydrocephalus, and the necessity for copious depletion in its early stage, were first clearly demonstrated by the late eminent Dr. Rush, of Philadelphia; and the late Mr. Maxwell, who practised nearly forty years in this district, entertaining similar views, bled even more freely, I believe, than Dr. Rush. But that Dr. Maxwell cured, or to speak more philosophically (for the word cured is only fit for the advertisement of the charlatan,) that sixty out of ninety cases of hydrocephalus recovered under his care, is, I fear, saying too much, and may lead in future, as it has already done in many instances, to irreparable mischief. Dr. Maxwell was what is usually called a bold and decided practitioner—enjoyed great local celebrity,—possessed for a long series of years the unbounded confidence of the public, and was both sanguine and sanguinary in almost every acute disease that came under his notice. He bled freely not only in hydrocephalus, but in every complaint that in any way simulated or approached that dangerous disease.

During the last seven or eight years the lancet has been much seldomer used here, and blood under every circumstance more sparingly and cautiously abstracted. The *recoveries*, I have no hesitation in saying, have been quite as numerous, in proportion to the deaths, as formerly, and more rapid and satisfactory.

It must not be supposed, however, that I object to timely and full bleeding in well-marked cases of inflammatory hydrocephalus; on the contrary, I hold it of the first importance, that blood should be taken early in such cases, and from the jugular vein however young the patient may be.* I am only anxious to caution against returning to the frequent and profuse bleedings of former years.

We all know that there is a fashion in the affairs of medicine, which, like Byron's tide in the affairs of women, "when taken at the full leads God knows where." At the time I settled in Dumfries,—twenty-five years ago,—and for several years afterwards, I was just as sanguine and sanguinary as others, and so enamoured was I with the free way in which the vital fluid was spilt, and the apparent advantage of the practice in almost all cases among children simulating hydrocephalus, that in the summer of 1818 I transmitted you a short paper on the subject, which you did me the favour to publish in the October number of your Journal for that year.

The writings of Hall and Wardrop, on bloodletting, have done much good, and will, I trust, continue to have a salutary influence on the profession.

I am, Gentlemen,

Your very humble Servant

ARCHD. BLACKLOCK,

Late Surgeon R.N.

Dumfries, Oct. 20, 1840.

* In all acute diseases of infants and children when it is thought advisable to make a speedy impression by bleeding, the jugular vein, I think, ought to be preferred: the operation can be easily and safely performed by any person of ordinary adroitness; and the flow of blood may at all times be readily and permanently arrested by passing a fine cambric needle through the edges of the cutaneous orifice, and forming the twisted suture upon it with a common thread. Dr. Maxwell uniformly advised this method of securing the orifice, and often did it himself; for he was not one of those who hesitate to put a hand to when necessity requires.

CASES OF A FATAL WOUND OF THE INTESTINE INFLICTED BY A CLASP-KNIFE OPENING BY GYRATION: OF MASKED AND RAPID PLEURITIS AND PERICARDITIS; AND ALSO TWO REMARKABLE CASES OF JAUNDICE FROM OCCLUSION OF THE DUCTS, WITH DISTENTION OF THE GALL-BLADDER BY A COLOURLESS FLUID DESTITUTE OF BILE: AND OF ULCERATION OF THE RIGHT AND TOTAL DISAPPEARANCE OF THE LEFT KIDNEY: intended to illustrate the conservative efforts of Nature to avert danger, by means of compensating organs and vicarious functions. By Sir *David J. H. Dickson*, M.D. F.R.S.E. F.L.S. &c. Inspector of Hospitals.

On the afternoon of the 22nd April, 1840, a boat from H.M.S. *Ætna*, after landing ten patients at this hospital, proceeded to the opposite side of the Creek, with three army invalids, also from the North Coast of Spain, for the Military Hospital. While the officer went up with these men, the boat's crew (among whom were George Davis, æt. 21, and William Walker, æt. 20, messmates) amused themselves on the beach "skylarking," as it is termed, wrestling, &c. The latter had been thus engaged with another man, when the former came up behind, and after smearing his face with some dirt, ran off. Walker pursued him, whirling a closed knife attached to a long cord, which he held in his hand: but which, opening by the rapid gyration, (as it afterwards did, when the experiment was tried at the coroner's inquest) the point of the knife struck Davis, and wounded him in the left side of the abdomen, about half-way between the groin and umbilicus. When brought to the hospital, about 5 p.m. the wound, which was in a slanting direction, did not appear to be deep, nor to have penetrated the peritoneum: but, notwithstanding depletory measures, symptoms of intense inflammation supervened, and proceeded with such rapidity, that he died next evening at half past eight o'clock. What adds to the melancholy interest of this catastrophe, is, that although the result of the inquest was "accidental death," and no blame was imputed to Walker, who was considered of a mild, quiet, inoffensive disposition, and rather "soft," than otherwise, yet the death of his mesemate so preyed upon the mind of the poor lad (who was a native of Dundee, and naturally rather low spirited) that he fancied he was an object of dislike to the officers and men; that he could not do anything to please them, &c. and, ultimately, he was sent to the hospital on the 4th of June, in a state of profound melancholia; having twice on that day attempted to commit suicide—in the first instance by strangulation, and afterwards by jumping overboard. By kindness and proper medical treatment, he recovered from this state of mental depression, and was discharged to the Cambridge, for which vessel he had expressed a preference; and I learned a few days afterwards that he was doing his duty like the other men, but I have not heard anything of him subsequently. The above particulars were related to me by Richard Wheeler (who was coxswain of the boat and afterwards a patient in this hospital), and others who witnessed the unfortunate accident: and I shall now only add the report of the dissection of Davis, made by Mr. Weale, my senior assistant, and which was laid before the coroner at the inquest.

Sectio Cadaveris, 20 hours, p.m.—The body was discoloured by livid blotches. The belly was tympanitic, and blood flowed from the mouth. On the left side of the abdomen there was a cut (evidently made by a sharp instrument) nearly three-quarters of an inch in length, and situated about the middle of a line drawn from Poupart's ligament to the umbilicus, though somewhat external to the latter. A probe could be introduced rather more than an inch into this wound, which ran in an oblique direction downwards and inwards, perforating the centre of the rectus abdominis muscle, and entering the cavity of the abdomen. From this opening some gas was observed to be gradually issuing; but its obliquity,

and consequent valvularity prevented any other fluids from escaping. The epigastric artery lay close to the upper extremity of the wound, and a large branch of that vessel bounded it inferiorly, but both had escaped. The parietal, as well as the intestinal peritoneum was of a mottled, deep red colour, and the convolutions of the intestines were agglutinated by coagulable lymph; while there was a considerable quantity of serum, mixed with fecal matter and gas, in the cavity of the abdomen, which had escaped by an opening in the jejunum, evidently in the direction of the wound: and, then capable of admitting a goose quill. On another knuckle of the bowel there was a deep red spot, probably from having been grazed by the point of the knife. The mucous membrane of the intestines and stomach was not inflamed, but the latter contained some feculent looking fluid. The lungs were much congested; the bronchial lining membrane was of a deep dusky red colour, and the trachea contained semi-coagulated blood.

It is too probable that no treatment would have availed in the present case: and I need not here dwell upon the vast importance of the *earliness* of energetic measures in such instances; in consequence of the incomparably greater rapidity and danger of inflammations of the serous than of the mucous membranes; or of those of the abdomen than of the thorax: but as illustrating the occasionally obscure and masked, yet rapid and dangerous character of those of the chest also, I may here adduce the autopsy of two late cases of *pleuritis* and *pericarditis*: in the one who was admitted for "fever," on the 10th, and died on the 18th of July, but in reality with empyema of the left pleura, the effusion, though intolerably offensive and exceeding a gallon in quantity so as to displace the heart to the right side, had speedily taken place; and the compressed lung and all the pleural reflexions were covered with false membrane; large shreds of which also hung from the costal lining, which was gangrenous in several places.

In the other instance, the patient, an officer, had been ill for about a week only, but neglected at first to apply for assistance, and had been so far relieved by depletion as not to be considered in any danger, until the morning when he was admitted into this hospital, moribund; yet in so short a period, the heart and pericardium (which contained at least 24 ounces of puriform fluid, with masses of natant lymph in it) had become so thickly coated with false membrane as to present a reticulated appearance, while the serous membrane beneath was of a deep red colour, from vascular injection.

I shall not here detail the well known processes by which Nature, by the absorption of old and the deposition of new matter, effects the reparation of injuries inflicted by accident or disease in the various structures of the body,—as in the case of fractures—the incarnation of wounds—the prevention or arrest of hæmorrhage, &c. or the wonderful efforts of this conservative power to repair, or limit the mischief which may have been produced by the effusion, and re-absorption of pleuritic and other accumulations of fluid,—the conversion of false membrane—the sprouting of new to compensate for the loss of old vessels—the occasional lining and approximation of tubercular and other cavities—the closing of apoplectic cysts, &c. &c. but will conclude by adducing only two very recent instances, illustrative of the attempts of this ever-busy power—whether partially successful or abortive—to arouse compensating organs to increased action, and thus, by means of vicarious functions or vicarious discharges, as by the exhalants &c., to supply the office, or make up for the deficiencies of such as are impeded or suppressed, in the latter point of view. In the following case in which the occlusion of the duct completely prevented the admission of bile into the gall-bladder, the secretion even to repletion of a colourless ropy fluid like saliva, from its internal surface, and the effusion of blood, and apparently of bile with which the system was loaded, by the intestinal exhalants, are singularly curious and interesting.

John Holmes, S. æt. 52, was admitted with what is vulgarly termed the "black jaundice," on the 14th, and died on the 22nd of July last. He stated that he had never been discoloured before; that he imputed it to having received a blow on the back; and that he had been ill only three weeks, which is incredible, considering the extent of disease afterwards detected. The face and extremities were of a dark mahogany colour; while the body exhibited the extraordinary appearance of purple spots, on a deep yellow ground. The liver was tender, and much indurated; and not only was the urine of the deepest hue, but the ejections from the stomach and bowels, instead of being pale, consisted of a very dark, bloody, offensive matter, which appeared to be a mixture of mucus, blood, and bile, thrown out by the intestinal exhalants: for from the occlusion of the gall ducts, the system was so thoroughly imbued with this fluid, that the white tissues, and even the lining membrane of the arteries were deeply dyed with bile. I need scarcely add that where the portal and hepatic circulation is much obstructed, by what is termed "scirrhus," or other structural disease of this viscus, or of the heart, &c. congestions take place in other organs, which nature attempts to relieve by vicarious discharges. Hence, as in a late instance, we occasionally meet with melæna, or other profuse evacuations, *supra infraque*, where no evidence of disease of the mucous surface can be detected—and, more frequently, with serous, or sanguineous effusions, in the shape of dropsy, or hæmorrhage from the stomach, bowels, lungs, nostrils, &c. The extent of such obstruction is strongly portrayed in the following dissection of *Holmes*, ten hours p.m.

The abdomen contained a small quantity of yellow serum. The liver was thickly studded with large tubera, especially its concave surface, though it was tuberculated throughout;—but its colour was lighter, and its situation better defined than in health;—the paler tissue forming a yellowish olive ground, which rendered the vascular parts more distinct. On cutting it, no blood escaped, but a clear, oily-looking fluid of the consistence of synovia, flowed in considerable quantity from the incised surfaces.

The gall bladder was enormously distended by a perfectly colourless, but somewhat ropy fluid, like saliva; but destitute of any appearance of bile whatever; and the cystic and hepatic ducts were completely obliterated, and lost, in a scirrhus, pancreatic-looking mass, deposited between the layers of the lesser omentum; and involving the great end of the pancreas, which did not seem to be further diseased:—its duct being pervious to within an inch of its extremity. The hepatic vessels, vena cava, aorta, and the upper third of the duodenum were inseparably accreted together by this morbid deposit, which surrounded the aorta as far as the superior mesenteric artery: and must have caused considerable obstruction of the inferior vena cava.

The portal system was unusually bloodless. The stomach and upper part of the intestines contained a great quantity of a dark offensive fluid, resembling a mixture of bilo-grumous blood and matter; and the mucous surface had an ecchymosed appearance.

The spleen was healthy, the kidneys were large;—internally of a yellowish-olive colour; and a bilious looking fluid exuded so freely on section, that they seemed as if they had been soaked in bile; and, as already noticed, all the white tissues, and even the lining membrane of the arteries, were deeply tinged with this fluid.

The last which I shall mention was, also, a very extraordinary case of ulceration of the right, and the absence, or total disappearance of the parenchyma of the left kidney; which, whether resulting from original vice of conformation, or, which is more probable, absorption from disease, is rendered still more remarkable by the statement of the surgeon that the man, a quarter-master, from the Vanguard, at Portsmouth, had been actively employed in raising volunteers

at Devonport, and had been taken ill only three days previously to his admission into the hospital.

Isaac Abrahams, æt. 43, was received with symptoms of gastro-enteric, and renal disease, on the 14th, and after laying some days in a semi-comatose, or delirious state, latterly with suppression of urine, and copious perspirations of a strongly urinous, ammoniacal smell, died on the 23d July, 1840.

Sectio cadaveris, 35 hours p.m. The vessels on the surface of the cerebrum were tinged with blood; and the arachnoid membrane was raised by a copious effusion of serum, emitting an odour like new-made hay. The substance of the brain was firm, and presented, on section, a quick succession of numerous bloody points; but no fluid was found in the ventricles at its base, nor in the spinal canal.

The contents of the thorax, as in the preceding case, and also of the abdomen, appeared to be nearly normal; with the exception of a large, oblong, fluctuating tumor, which at once attracted attention, in the left hypochondrium. It projected beyond the colon, which it pushed backwards and towards the side. The supra-renal capsule was attached to its superior extremity. The renal vessels entered it about one-third lower;—and about two inches and a half below this, the ureter issued between its coats obliquely upwards, and then turned downward in the usual direction, and of the natural size. Upon being removed this tumor measured about sixteen inches round, and twenty-three inches in its oblong circumference. It was covered partially by the peritoneum, and entirely by the usual fibrous coat; between which, and the internal mucous surface, a considerable number of large blood-vessels ramified. It was completely distended by a perfectly limpid, inodorous fluid, like water, which, on puncturing it, escaped.

The parenchymatous, and indeed the whole structure of the kidney, had entirely disappeared; though some faint traces of the papillæ were still visible. The mouth of the ureter was perfectly distinct, and the opening permitted the introduction of a probe for more than an inch, while the obliquity of its passage through the coats, impeded its further progress,—and acting as a valve, for the same reason, prevented the fluid collected in this large sac from descending into the bladder; for, otherwise, the canal seemed to be permeable throughout. The right kidney, having a compensative or double duty to perform, was enlarged, and the infundibula and the commencement of the ureter for some inches were dilated; while the coats of the latter were also thickened, so that it measured about the size of the thumb in circumference. The substance of the kidney had evidently suffered from recent inflammation, and was thickly studded with bloody points. Its pelvis, which was distended with brownish turbid urine, was covered with ash-coloured false membrane; which was partially detached, and exposed a raw and ulcerated surface beneath, extending into the ureter; which, as already noticed, was dilated, but became gradually narrower, until it exhibited the usual size and appearance, within five inches of the bladder. The latter organ was much contracted in size, but apparently in a healthy condition.

DAVID J. H. DICKSON.

Royal Naval Hospital, Plymouth,
1st September, 1840,

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28. Breviate of the Draft of the Medical Bill. By Mr. HAWES.

29. The History of the early and present State of the Venereal Disease examined; wherein is shewn that Mercury never was necessary for its Cure, &c. By G. HUME WEATHERHEAD, M.D. Octavo, pp. 258. Highley, Fleet Street. Nov. 1840.

30. Demonstrations of Anatomy: being a Guide to the Dissection of the Human Body. By GEO. VINER ELLIS, one of the Demonstrators of Anatomy in the University College. Octavo, pp. 620. Taylor and Co. Nov. 1840.

31. Essays and Heads of Lectures on Anatomy, Physiology, Pathology, and Surgery. By the late ALEX. MONRO, Secundus, M.D. Upwards of 50 years Professor of Anatomy and Surgery in the University of Edinburgh. With a Memoir of his Life

by his Son and Successor. Octavo, pp. 132. with a Portrait and numerous Plates. Maclachlan and Stewart, Edin. Nov. 1840.

33. The New York Journal of Medicine and Surgery, No. VI. Oct. 1840. *In exchange.*

33. Medico-Chirurgical Transactions, Second Series, Vol. V. Nov. 1840.

34. Illustrations of the Comparative Anatomy of the Nervous System. By Jos. SWAN. Part VI. Price 7s. Longman and Co. Nov. 1840.

35. Thesis on the Nature and History of Plague, as observed in the North-western Provinces of India. By FRED. FORBES, M.D. Octavo, pp. 102. Maclachlan and Co. Edinb. 1840.

36. Elements of Chemistry, including the actual State and prevalent Doctrines of the Science, &c. By ED. TURNER, M.D., and W. GREGORY, M.D. Octavo, pp. 998. Taylor and Walton. Dec. 1840.

37. Spinal Diseases: with an improved Plan of Cure, including what are commonly called Nervous Complaints. By JOHN HENRY ROBERTSON, M.D. Glasgow, Dec. 1840. D. Robertson, Publisher.

28. Outlines of Medical Jurisprudence. (Course of Lectures.) By THOS. STEWART TRAIL, M.D. Octavo, pp. 222. Edinburgh, 1840. Second Edition. Black & Co.

39. Practical Observations on the Pathology and Treatment of Stricture of the Urethra, with Cases. By ROBERT WADE, Sen. Surgeon of the Westminster General Dispensary, &c. Octavo, pp. 149. Churchill, London. Dec. 1840.

40. A Treatise on the Nervous Diseases of Women; comprising an Inquiry into the Nature, Causes, and Treatment of Spinal and Hysterical Disorders. By THOMAS LAYCOCK, M.D. Octavo, pp. 356. Longman and Co. Dec. 1840.

41. An Address to the Medical Practitioners of Ireland on the Subject of Vaccination. Second Edition, illustrated by a Plate, with an Appendix, &c. By SAMUEL B. LABATT, M.D. Dublin, Hodges and Smith. Octavo, pp. 202. Dec. 1840.

42. Practical Remarks on the New Ope-

ration for the Cure of Strabismus or Squinting. Illustrated with Lithographic Engravings. By EDW. W. DUFFIN, Graduate of the University of Edinburgh, &c. Pp. 147. Churchill, London. Dec. 1840.

43. Introductory Lecture on Surgery, delivered on the 4th November, 1840. By JAMES MILLER, F.R.C.S. E., one of the Surgeons to the Royal Infirmary, Edinb.

44. A Discourse on the Phenomena of Sensation, as connected with the Mental, Physical, and Instinctive Faculties of Man. By JAMES JOHNSTONE, M.D. Physician to the General Hospital of Birmingham, &c. Pp. 264. Churchill, London. Dec. 1840.

45. An Atlas of Plates, illustrative of the Principles and Practice of Obstetric Medicine and Surgery. With descriptive Letterpress. Nos. X. XI. and XII. By FRANCIS H. RAMSBOTTOM, M.D. &c. Churchill, 1840.

46. A Treatise on Stricture of the Urethra, with an Appendix on Dilatation by Fluid Pressure, &c. By JAMES ARNOTT, M.D. Second Edition. Octavo, pp. 234. Sherwood and Co. 1840.

47. An Inquiry into the Efficacy of Digitalis in the Treatment of Idiopathic Epilepsy. By EDMUND SHARKEY, M.D. Lecturer on Midwifery, &c. Octavo, pp. 80. Highley, Dec. 1840.

44. A Treatise on the Sympathetic Relation between the Stomach and the Brain, and, throughout, between the Digestive Organs and the Nervous Systems, in the Causation and Cure of Disease. With an Appendix, &c. By CHARLES WIGHTMAN, M.D. Resident Physician at Newcastle-upon-Tyne, Octavo, pp. 192. Simpkin and Co. London, Dec. 1840.


49. On Scientific Medicine, and its Relations to, and Claims upon, Society at large. An Address read before the North of England Medical Association. By WILLIAM ELLIOTT, M.D. With an Appendix. Highley, Fleet Street. Price 1s. 6d. Dec. 1849.

 A very clever Address.


50. Malta: considered with reference to its Eligibility as a Place of Residence for Invalids. By FRANCIS SANKEY, M.D. Pp. 23.

51. Elements of Chemistry, &c. By ROBT. KANE, M.D. Professor of Natural Philosophy to the Royal Dublin Society, &c. Part I. Illustrated by 120 Woodcuts. Dublin, Hodges and Co. Dec. 1840.

52. Descriptive Catalogue of the Preparations in the Museum of the Royal College of Surgeons of Ireland. By JOHN HOUSTON, M.D. &c. Curator of the Museum, &c. Octavo, pp. 604. Hodges and Smith, Dublin; Renshaw, London. 1840.

 This is a most valuable volume for those who have access to the collection—and indeed to every person, on account of the number of concise histories and cases appended to the descriptions. To be noticed farther in our next.

53. Reasons for establishing a Sea-bathing Infirmary on the Western Coast, for the Benefit of the Poor, &c. By J. K. WALKER, M.D. Senior Physician to the Huddersfield Infirmary. Huddersfield, Dec. 1840.

 We wish this proposal every degree of success.

54. The Medical Profession, as it was, as it is, and as it ought to be. A Lecture introductory to the Business of the Original School of Medicine, Peter Street, Dublin, delivered by G. F. HAYDEN, A.B. M.B. T.C.D. &c. Octavo, pp. 24. Fannin and Co. Dublin. Dec. 1840.

55. Anatomie Pathologique du Corps

Humain. Par M. CRUVEILHIER, M.D. Livraison No. 36. Bailliere, 1840.

56. Practical Hints on the Cure of Squinting by Operation. By F. W. GRANT CALDER, Assistant Surgeon to the Second Regiment of Life Guards. Octavo, pp. 96. Renshaw, Dec. 1840.

57. Memoranda regarding the Royal Lunatic Asylum, Infirmary, and Dispensary of Montrose, &c. By RICHARD POOLS, M.D. &c. Medical Superintendent of the Asylum. Octavo, pp. 218. Appendix, pp. 69. Longman and Co. 1841.

58. On the Diseases of the Hip-joint; with Observations on Affections of the Joints in the Puerperal State. With Plates. By WILLIAM COULSON, Surgeon to the Magdalen Hospital, &c. Second Edition, with Alterations and Additions. Longman and Co. 1841.

59. History of British Birds. By WM. YARRELL, F.L.S. &c. Parts XX. and XXI. VAN VOORST. London, September and November. 1840.

60. A General Outline of the Animal Kingdom, and Manual of Comparative Anatomy. By THOMAS RYMER JONES, F.Z.S. Prof. of Comparative Anatomy in King's College, London. With numerous Engravings on Wood. Van Voorst, London. Parts XII. and XIII. August and Decem. 1840. Price 2s. 6d.

Notices to Correspondents.

Erated Magnesia Water.—Mr. Pitt, of King Street, Snow Hill, has prepared a most agreeable beverage from Murray's "fluid magnesia," which is as brisk as soda water, and contains a considerable quantity of free carbonate of soda in the pint bottle. It forms a most delicious draught, extremely useful as an aperient and antacid.

A regular Subscriber.—Probably Dr. Blundell.

Preparing for the Press—A new and greatly enlarged Edition of the "INFLUENCE OF TROPICAL CLIMATES ON EUROPEAN CONSTITUTIONS." By James Johnson, M.D. and James R. Martin, Esq. late Presidency Surgeon, and Surgeon to the Native Hospital, Calcutta.

. Mr. Martin will bring down all Information on Indian diseases and Topography to the present period in this the Sixth Edition.

Ceylon Moss.—Mr. Plevité has contrived to convert this nutritious substance into several agreeable forms, to suit the tastes and appetites of invalids. We have been trying and prescribing the jellies and the lozenges, of late, and can speak strongly in their favour. They can now be obtained at Savory and Moore's, and, we believe, at all the most respectable chemists in London.

Erratum.—By some strange mistake, the name of Wells was substituted for Walshe, in our notice of the article "Cancer," in the Cyclopædia of Practical Surgery. Dr. Walshe, of Camden Town, is the author of the article in question.

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JANUARY 1, TO APRIL 1, 1841.

MEDICO-CHIRURGICAL TRANSACTIONS, Published by the Royal
Medical and Chirurgical Society of London. Vol. XXIII.
London : Longman and Co. 1840.

[Concluding Notice.]

We resume our examination of the contents of this volume, with a—

CASE OF LARGE OSSEOUS TUMOR OF THE UTERUS. By JAMES M. ARNOTT,
Esq. Surgeon to the Middlesex Hospital.

A maiden lady, aged 72, was run against by a big dog, and thrown forwards on the pavement, on the 18th of February, 1840. There was a large tumor in the abdomen, and upon this the lower part of the ileum being struck, was burst. She died of fecal extravasation and peritonitis in thirty-four hours.

On removing, says Mr. Arnott, the tumor, which was effected with some difficulty, so firmly was it impacted in the upper opening and cavity of the pelvis, the bladder was found attached to it in front, low down; but the uterus could not be readily made out. However, on tracing the vagina upwards, the cavity of the uterus was discovered in the shape of an elongated, very narrow canal, stretching along the posterior surface of the tumor, over which the Fallopian tubes were likewise spread out. The *form* of the uterus had *entirely*, and its *substance*, in a great measure, disappeared; for while its posterior parietes, forming the back part of the elongated canal, were reduced to a state of extreme atrophy, so as to resemble membrane, the *anterior* had become expanded and stretched over the surface of the tumor, which had clearly been originally developed in its substance, and was now covered throughout by a very thin, but more or less distinct, layer of uterine tissue.

The tumor was of an irregular oval shape, being larger at the upper end. It measured *seven* inches in length, *nineteen* in circumference in the direction of the oval, *fourteen* round at the distance of an inch from its upper end, *thirteen* at the same distance from its lower. The colour was yellowish white; the surface slightly tuberculated or botryoidal. It weighed, as has been already stated, five pounds. On being sawn through, it was found as hard as marble, and quite solid: yet the section presented an appearance as if the mass had been formed of several separate portions firmly agglom-

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merated; an *appearance* arising, however, from minute traces of fibrous tissue being here and there still perceptible in it. Attached to the upper extremity of the large one, but distinct from it, there were several small tumors, varying in size from that of a pea to a chestnut, and which presented precisely the same structure."

Professor Daniell found that it had the following composition.

Animal matter, including water and ammoniacal salts.	35°
Phosphate of lime, with a small quantity of phosphate of magnesia, ..	56°
Carbonate of lime.	5.
Alkaline sulphates, phosphates, and muriates	4°

100°

It turned out that the lady had discovered the tumor, when of the size of a goose's egg, in 1808. She consulted Dr. Denman, who privately informed her friends that it was cancer of the uterus in an inactive state.

The case is interesting, and is communicated in Mr. Arnott's usual picturesque style.

II. ON THE RAPID ORGANIZATION OF LYMPH IN CACHEXIA. By JOHN DALRYMPLE, Esq. Assistant Surgeon to the Ophthalmic Infirmary, Moorfields.

Mr. Dalrymple, the author of an excellent treatise on Diseases of the Eye, and an accomplished ophthalmic surgeon, labours, in this paper, to establish the conclusion that organization of plastic effusions is more facile in the cachectic than in the robust.

Those, he says, who have been accustomed to witness ophthalmic diseases on a large scale, cannot fail to be at once struck with the greater tendency to the effusion and organization of fibrine on the surface of the iris in syphilitic cases than in those of idiopathic iritis, and there will be no difficulty in admitting that the specific cases occur, at least in this metropolis, in by far the greater proportion, in enfeebled constitutions;—in those debilitated by excesses, irregularity of moral habits, or the mal-administration of mercury in the primary disease.

The first appearance of the tubercles of fibrine, which is the form such deposits generally assume, is observed at the annulus minor of the iris, where the capillary vessels are most numerous interlaced, more minute, and constitute the extreme circulation of the part. Gradually, however, as the affection extends, we find these deposits occupying various spots of the anterior plane of the membrane, while from a yellowish colour they assume a red hue, more or less distinctly marked, manifesting the organization of the fibrine.

"Again," he continues, "in those affections of the posterior part of the eye in children, which we have been accustomed to call malignant, almost every one has been surprised to observe, in the early stage, how healthy appear to be the subjects of this frightful malady. During the period of the existence of the bright and metallic reflexion from the deposit at the posterior part of the globe, the child appears to retain its ordinary health, although perhaps the disease may be going on to increase. But so soon as you begin to trace the organization of

the fibrine, indicated by the red points, or ramifications of actual vessels, not only may you expect a great deterioration of the general health, but also the rapid progress of the affection.

It is then curious to inquire whether the decline of health precedes, accompanies, or follows this organization, or rather, whether it is the cause or consequence. I do not hesitate to declare my belief, that it is the cause rather than the effect; first, because I have often seen the disease existing many months prior to the organization of the deposit, and upon an accidental impairment of health it has suddenly assumed an active form, and gone on unchecked to a fatal termination; and secondly, because, when in a particular case, the health of the child had by great care been much improved, the disease itself appeared to have been checked, and the globe began to waste; and lastly, because in this same case, when the negligence of the parents again allowed the health of the child to decline, the disease burst forth with redoubled activity, and went on rapidly to a fatal termination." 209.

From these considerations, he turns to injections of morbid parts. These he thinks prove the same ready organization of the materials of the blood, in enfeebled conditions of the system.

Mr. Dalrymple first describes the injected preparation of a knee-joint amputated for extensive disease. He refers more particularly to the abscesses in the cellular tissue and amongst the ligaments.

These particular cysts were of various sizes; all, however, more or less small, some containing pus, others a cheesy and almost concrete material. All the cavities, however, were lined with what at first appeared to be unorganized fibrine, varying from half a line to two lines in thickness, seldom smooth, but rather rugous, and on its free surface somewhat nodulated or granular. This fibrine was detached with so much facility from the vascular membrane lining the abscesses, as to lead one to conclude it was of recent origin, and had no vascular communications with the highly-injected membrane, from which it was evident it had been poured out. When, however, some portions of this fibrine had been carefully removed, dried on plates of glass, and submitted to the microscope, it immediately became evident that it was not only organized, but minutely traversed with vessels, injected, *ex rotis*, with coloured size.

When a portion of fibrine had been removed in adhesion with the vascular, or what is often called the pyogenic membrane, the continuity of the vessels from the latter into it was delicately exhibited. If a portion of both was cut in profile, or if the fibrine was carefully reversed from the surface of the pyogenic membrane, the same appearances were exhibited. Again, when a portion of the fibrine adhering to the vascular web of the abscess was viewed from its free surface, the penetrating power of the instrument showed these delicate capillaries shooting up from below and ramifying to the surface of the effusion.

In a case of scurvy, under the care of Mr. Busk, of the Dreadnought hospital ship, a coagulum appeared to have become organized.

"A seaman was received on board the Dreadnought in the last stage of sea scurvy, of which he shortly died. One of the legs of this man was injected, and on examination it was found that a large deposit of coagulated blood adhered to the bone of the tibia, covered by periosteum, which was raised and separated from the bone from the tuberosity nearly to the ankle. On each of the three sides of the tibia was the same appearance observed. The clots measured from three to four inches in length, and in thickness from a quarter to

half an inch. The periosteum which firmly adhered to the blood, was divided and reflected above and below, so as to expose the external surface of the clot. The injection had surprisingly succeeded, and the dark coagula were seen, even with the naked eye, studded in every part with red points, as of the torn mouths of vessels that had entered from the periosteum.

Sections of this blood, made perpendicularly to the bone, exposed numerous branches all filled with coloured size, and which appeared at first sight as if they were the vessels that had originally passed directly from the periosteum to the outer lamella of the tibia, but raised and elongated by the separation of the membrane, and traversing the surrounding effused coagula.

When, however, thin slips of this mass were dried on plates of glass, and rendered transparent by immersion in Canada balsam, a most intricate arrangement of capillary vessels was seen, ramifying and inosculating under various angles, and in a somewhat arborescent form, throughout the entire mass of the clot.

Thus, although the larger vessels might possibly have been the original vessels of transmission from the periosteum to the bone, yet it was evident that the whole clot was minutely organized with innumerable new and minute vessels; whose arrangement was so determinate and uniform, as to leave no doubt of the entire dissimilarity of the organization of this tissue from the periosteum on the one hand and the bone on the other." 213.

The coagulum must have been recent, and the fact, as well as the severity of the scurvy, are evidence enough of the debility of the patient.

Mr. Dalrymple thinks that the growth of malignant, and perhaps of the more simple, tumors affords another example of the tendency in weakened states of system to the organization of plastic effusions. It is well known that the former become developed much more rapidly towards the close of life, when the patient has been worn down by confinement, want of exercise, and long suffering. And it is not improbable that occasionally the latter or more harmless forms of tumor are converted into malignant during some sudden or gradual deterioration of the general health. But the tumors which result from the mere hypertrophy of natural tissues, as the adipose, &c., must be excepted.

As it is from chronic inflammations that the main additions to the bulk of parts are made, Mr. Dalrymple attributes their persistence to cachexy. And he thinks that injection of new structures depends on want of tonicity of the capillaries of the old, and their consequent dilatation.

The Paper is an ingenious one, and the subject merits attention.

III. A CASE OF RECOVERY FROM CUT THROAT, IN WHICH BOTH THE LARYNX AND PHARYNX WERE EXTENSIVELY OPENED. By R. A. STAFFORD, Esq., Surgeon to the St. Marylebone Infirmary.

J. S. aged 25, a servant out of place, with a razor, divided the larynx in full half its circumference, exactly between the os hyoides and thyroid cartilage, exposing its internal surface without wounding any important blood-vessel. He was brought into the St. Marylebone Infirmary by a policeman, October the 21st, 1839, and appeared in a very exhausted condition; having a feeble pulse and cold extremities. The wound had been dressed by another surgeon, and therefore it was not opened. Nutritious fluids were ordered, and, there being cerebral excitement, leeches to the temples, &c. were prescribed.

In the middle of the second night, whilst the back of the nurse who had been ordered to watch him was turned, he made an attempt to open the wound with an old blunt knife which he had secreted; and succeeded so far as to divide the sutures of the former wound, and to cut on into the pharynx. No vessel of any consequence was injured, and he coughed up only a little blood. The wound was brought together by two sutures, with the view of preventing the wide gaping which otherwise would have taken place, and it was lightly dressed. He breathed through the mouth.

From this period the food escaped through the wound in the pharynx, and it was necessary for him to be fed by an elastic tube being passed down the œsophagus into the stomach. The cerebral excitement and fever increased, and continued for several days. He was kept under strict restraint. Blood was frequently abstracted from the neighbourhood of the head: he was blistered and purged; took sudorifics; used freezing lotions and the cold douche; and at length symptoms of effusion into the ventricles and pressure on the brain, being by stupor and dilated pupils indicated, he was salivated by mercurial friction. The head-symptoms from this treatment gradually subsided, but he was left extremely weak. Quinine, wine and nutritious diet were administered, and his strength increased. The wounds now began to heal. The wound of the pharynx being the lesser, first closed up, and afterwards that of the larynx. On the 9th of December the whole wound was completely cicatrized, but the voice of the patient was lost, and he could only speak in a whisper.

The man had twice before endeavoured to destroy himself, and, after quitting the Infirmary, he hung himself.

IV. ON THE STRUCTURE OF THE HUMAN PLACENTA, AND ITS CONNEXION WITH THE UTERUS. By WILLIAM BLOXAM, Esq.

Mr. Bloxam has carefully examined the placenta. Mr. Bloxam gives a circumstantial account of his investigations, for which we must refer to the *Transactions*. His conclusions we transcribe. They are—

Firstly. That the blood enters the placenta through the short curling arteries of Hunter; and that although their size is insignificant compared with the venous system of the uterus, yet their relative number being greater, a full supply of blood is insured to the organ; whilst by the smallness of their calibre, they prevent the maternal circulation from expending its full momentum on the system of the child, under the accidental shocks physical and mental to which the mother is daily liable.

Secondly. That these vessels ramify on the spongy tissue of the placenta, and are there in apposition with the extremities of the umbilical veins.

Thirdly. That it is highly probable, that some of the properties of the maternal blood pass into the circulation of the fœtus by this means, and having fulfilled its functions in the fœtal œconomy, the residue is returned to the placenta by the umbilical artery.

Fourthly. That from the free terminations of the umbilical arteries it transudes into the interstitial structure of the placenta; which, it may be remembered, is continuous with the semilunar apertures on its uterine surface.

Fifthly. That these apertures are applied to the openings on the internal surface of the uterus, and furnish the channel by which the blood, or its principles, are restored to the system of the mother.

"As far as I am aware, there is no evidence of direct communication between the fœtus and its parent, furnished by the researches of comparative anatomists. Mercury, however, has been found in the vessels of the fœtus after having been injected from the uterus. Here, perhaps, the weight of the substance employed may have conducted to the result."

V. OBSERVATIONS ON INJURIES OF JOINTS, AND THEIR TREATMENT. By RUTHERFORD ALCOCK, Esq., K.C.T., &c. late Deputy Inspector-General of Hospitals with the Auxiliary Forces of Portugal and Spain; and Lecturer on Surgery.

Mr. Alcock deserves the highest credit for communicating, as he does, the results of his experience in the recent revolutionary wars in Portugal and Spain. He has endeavoured to render the knowledge he has acquired available to the profession at large, and has published some highly interesting facts, as well as instructive observations.

The following memoir on Injuries of Joints deserves attentive perusal. We shall endeavour to select the more prominent points and lay them before our readers.

Mr. Alcock alludes in the beginning of the paper to excision of the articular ends of bones after injuries. And his remarks are valuable. He shews that this operation has not been sufficiently practised in the army.

Excision of the Head of the Femur.

"Excision of the head of the femur has been practised. M. Paillard, in his '*Relation Chirurgicale du Siège d'Anvers*,' gives an example of resection of the head of the thigh bone for a comminuted fracture of the neck,—six inches of the bone, including the head and neck, were removed with very trifling loss of blood. During the first few days, some chances of success were observed; but the limb quickly afterwards became gangrenous, and the patient died on the ninth day. Mr. White, of Manchester, was the first to propose this operation, about the middle of last century. One case only of its actual performance had been related before M. Seutin's, by an American, and was not considered, I believe, as very certainly authentic. The result of M. Seutin's case is not likely to lead many to perform an operation which, I cannot but think, very little calculated to save a useful limb under the most favourable circumstances. I believe, however, that Mr. White, Surgeon to the Westminster Hospital, has performed a similar operation for carious disease of the head of the femur, and with good result." 251.

Excision of the Head of the Humerus.

In wounds of the shoulder-joint, observes Mr. Alcock, Larrey speaks of ten cases in which he avoided amputation by extracting or removing the head of the humerus; one died of fever, two of scrofula, and one of plague. In some there was ankylosis, in others a species of joint.

In 1794, M. Percy showed, in Paris, nine successful cases, where the head of the humerus had been removed; and Larrey again relates a case

where the top of the shoulder was struck by a four-pound shot, merely breaking the skin superficially, but fracturing underneath the head of the humerus, the scapular end of clavicle, the acromion and coracoid processes. He cut down upon the broken fragments, and removed them, including the head of the humerus. The wounds cicatrized, and the arm anchylosed at the shoulder, by the gradual approximation of the shaft. In another similar instance there was an artificial joint formed, and slight movement in every direction, although the arm seemed to have less strength than existed in the former case, where there was ankylosis. Mr. Guthrie also speaks of similar cases of cannon-shot injuries occurring in the British army; but all were fatal. He relates, however, several cases from musket-shot, where arms were saved by removing the head from the cavity, together with any other fragments of the neck.

These facts prove, as Mr. Alcock remarks, that excision of the head of the humerus will occasionally be successful even in injuries inflicted by cannon-shot, and may be applied with confidence to those resulting from musket-balls.

Excision of the Knee-joint.

Mr. A. reprobates this.

"To conclude at once with the articulations of the lower extremity, in reference to these operative means, I will observe that in injuries of the ankle, excision, whether of the astragalus or the end of the tibia, may form a resource; and examples are on record, when both the one and the other have been removed with success. If a shot, however, pass directly through the articulation, splintering articulating surfaces of both tibia and astragalus, I believe amputation to be almost invariably indicated. The excision or removal of the whole or portions of one of the articulating surfaces forming the ankle joint will more frequently be found expedient in the dislocations attended with laceration occurring in civil life, where it is often impossible to return the projecting parts to their proper position, than to gun-shot injuries more extensively shattering the bone, and contusing all the parts in the vicinity." 254.

Excision of the Elbow-joint.

Our author speaks favourably of this—a successful operation in civil practice.

Excision of the Wrist.

It is often, says Mr. Alcock, difficult to decide upon the course to be adopted in wounds and lacerations of this articulation. Patients occasionally recover from very severe injuries, such as the passage of a musket-ball through the carpal bones, or the laceration of a saw passing into the articulation with the hand. Yet these are cases at best eminently uncertain in their results; and although much may be adventured, but little should be promised or hoped. Excision of the end of the radius, the removal of a dislocated carpal bone, or of the head of a metacarpal bone, may occasionally be adopted, and with success, to prevent the loss of a hand. It is impossible, however, to predict, with any certainty, the degree of inflammatory and suppurative action which may ensue; and on this chiefly hangs the issue of the case.

If there be crumbling of one or more of the carpal bones, provided the tendons are not divided across, these fragments may be removed, and an attempt made to save the hand. But if there be comminution involving the greater part of the articulation, instead of its lateral extremities merely, it rarely happens that the tendons are not extensively torn across also; and then amputation would better be performed at once, and no attempt made by excision to remedy the mischief.

The second part of Mr. Alcock's memoir is occupied with the general results of injuries of the articulations, with regard to their frequency in military practice, and to their treatment, progress, and termination. Mr. Alcock first supplies two tabular returns:

No. I.—Comprises the Results of Gun-shot Fractures, involving Articulations, Amputations,—including all in two Periods of about one Year each. Cases not operated on including the Series of Thirteen Months only.

No. II.—The Results of Gun-shot Fractures involving the Articulations,—in Cases Amputated,—in Cases treated without Operation. Including a Period of about thirteen Months.

Thus, says Mr. A., the Return No. 1, embraces all the cases occurring within a given period; to which he has added all the amputations from such injuries, not only for the same but during several additional periods. As the periods embraced by the cases and the amputations do not therefore correspond, Return No. II, has been formed, giving all the cases treated or amputated within a given time, *and no others*.

Mr. A. has classed all injuries of joints under three heads. The first comprises those varieties of injury where in the majority of cases the limb may be saved, and where as a general rule it should be a principle of practice to attempt the cure.

The second contains what may be considered a doubtful or intermediate class. It comprises cases in which we find the difficulties both as to the diagnosis and line of treatment are considerably increased. They can be grouped neither like the first class, as injuries in which the attempt to save the limb may be made in the majority with good result: nor with the third class, where amputation is imperatively indicated from the first, and with as little delay as possible.

Mr. A. explains the principles of treatment which he has adopted, and which were applied to the cases included in the returns.

“In lacerated or incised wounds penetrating the capsule, it has been held matter of the highest importance to exclude the air, and secure, if possible, and by every means, union by the first intention. I have been led, by my observation of these injuries, to a conclusion not quite in accordance with this precept. Although it may safely be admitted as a general principle in surgery, that all wounds should be treated so as to procure the earliest possible union of their edges, this should be understood, in reference to wounds of joints, to apply only so far as the edges can be approximated without violence of any kind, constriction or pressure. I firmly believe that no pressure by bandages, compresses, or by means of strapping, can be applied in the first instance to injuries of joints, without doing mischief, and materially aggravating the inflammation, which, to some extent, must inevitably ensue.

I have found that cold, in the first instance, applied over the articulation, generally best assists in repressing and controlling the supervening inflammation, and if somewhat later it should become ungrateful to the patient's feelings,

it may occasionally be exchanged, with advantage, for warm water dressings: or if the joint has assumed a puffy, swelled and unhealthy appearance,—a state often to be traced to the injudicious use of poultices,—a more tonic and stimulating mode of dressing will generally cause improvement. Of this kind of dressing, the best seem to me either a decoction of aromatic herbs, with the addition of a little wine, or warm camphorated or sweetened wine, which has not been freely adulterated with bad brandy, as are generally most of the wines consumed in England. Such dressing is not used in this country, but is frequently employed in the rest of Europe; and I have no hesitation in stating that I have seen the happiest effects from its use, when more emollient applications, such as poultices, certainly did not arrest, but, on the contrary, appeared to promote the '*engorgement*' of the limb. There is indeed a strong prejudice in this country against such applications, but founded upon theory rather than practice." 267.

Antiphlogistic treatment must be enforced, and leeches are more particularly necessary. Absolute immobility of the limb is to be secured. Yet suppuration too frequently occurs in spite of all treatment. The matter must be evacuated. Openings in dependent positions and free incisions, either in the vicinity, or if necessary, through the capsule, should be promptly and boldly practised, together with such regulated pressure above and below the articulation, as the state of the limb may indicate and allow, in order to counteract the tendency to spread and burrow.

The health of the patient must be, of course, attended to. If great prostration of strength, hectic, and diarrhœa set in, amputation may become necessary, whatever the original injury.

Perfect quietude during and for some time after the healing of the wounds, is indispensable. Then gentle friction and passive motion may be tried, very gradually. If the ankylosis resulting be partial, probably considerable motion may be recovered, and some force may be used; care being taken never to push these measures so far as to induce inflammation in structures still morbidly susceptible. If the ankylosis, on the contrary, be complete, no attempts of this nature should be made.

Mr. Alcock examines the tables of articular injuries in reference to the following circumstances.

1. Their proportionate numbers, in relation to other classes of injuries, and of the articulations with each other.
2. Mortality, absolutely and relatively. Number of amputations to which these injuries give rise, and proportionate numbers in different periods.
3. Causes of mortality, with regard to the whole number of deaths, and to the number of deaths from each articulation, considered in relation to amputations at the three periods—primary, intermediary, and secondary, and to cases treated without amputation.
4. Influence of external and collateral circumstances.

1. *Proportionate Numbers, &c,*

Table II. shews the proportionate number of articular injuries in about 1,800 wounded officers and men during little more than twelve consecutive months.

"The average may be stated, therefore, as between 4 and 5 per cent., or about $\frac{1}{20}$ of the whole number of 1,800 wounded; the injuries to the articula-

tions counting 82. In a return already published of wounded men admitted into the General Military Hospital of San Telmo, in thirteen months, amounting to 1,350, the average is less. In the returns of the different actions it varies from 1 in 30, to 1 in 52; but in these are not included many of the worst joint cases, amputated on the field, which appear in the return as 'Field Amputations.' I consider, therefore, the Return No. II., formed with the greatest care and accuracy, to give the true average. In the returns already quoted of 1,351 wounded, at San Telmo, the proportion of injuries of the head was 7 per cent.; wounds of the trunk penetrating its cavities, between 4 and 5 per cent.; of fractures of the extremities, about 13 per cent., in which are included the joint cases; of severe wounds not in these classes, 33 per cent.; of slight wounds about 44 per cent.

With respect to the relative numbers in the different articulations, of the 82 recorded, nearly one-half are of the knee.

Knee ..	35:	proportion, 2·342:	mortality, 22
Elbow ..	19:	about .. $\frac{1}{4}$	5
Shoulder ..	11:	between .. $\frac{1}{4}$ and $\frac{1}{4}$	3
Wrist ..	7:	.. .. $\frac{1}{4}$	0
Ankle ..	6:	.. .. $\frac{1}{4}$	1
Hip ..	4:	.. .. $\frac{1}{4}$	3
Total ..	82		Total .. 34"

2. Mortality, absolute and relative.

The mortality amounted to 34 cases in 82, including in the number treated those injuries which did not, in the first instance, implicate the structure of the joint, but only at some later period, by the progress of diseased actions spreading from the original site of injury. The number of cases in which the joint was primarily and directly implicated amounts to 65; 17 were only secondarily affected. Of the 65—

between $\frac{1}{2}$ and $\frac{1}{6}$, 12 were cured with more or less loss of motion and power, but all with some use of their limbs.

$\frac{1}{12}$, 3 intermediary* amputations were performed, and two patients died.

$\frac{1}{6}$, 11 secondary amputations; 5 deaths.

$\frac{1}{3}$, 21 primary amputations; 7 deaths.

Between $\frac{1}{3}$ and $\frac{1}{4}$, 18 died under treatment, while the attempt was being made — to save the limb, either in the hope of success, or,

Total 65 more frequently, from the patient's refusal to submit to amputation. The result, therefore, stands thus—

33 recovered; 21 with loss of limb;

32 died; 18 without amputation;

7 after primary amputation;

2 after intermediary;

5 after secondary.

Total 32

* The term intermediary amputation refers to those performed between the third and twentieth days inclusive,—a period during which the febrile and inflammatory actions have commenced, rarely entirely subsided.

The mortality in the 3 classes stands thus, as regards the whole number of 65 :—

About $\frac{1}{3}$, or 7 died after primary amputation;
 $\frac{1}{3}$, or 7 died after subsequent amputations;
 Between $\frac{1}{4}$ and $\frac{1}{2}$, or 18 died during treatment without operation.

Total 32

These facts certainly tell in favour of primary amputation; for the 44 treated without it present a mortality of 25, more than one-half, whereas the primary amputations cause a loss only of one-third, although naturally performed for the very worst injuries: and while 12 only were cured without loss of limb, 18 died in the vain attempt to save, without, for the most part, offering any fair opportunity of remedying the evil by intermediary or secondary amputation.

Of the intermediary and secondary amputations, where treatment failing to save the limb, amputation offered the only ground of hope for life, 7 died out of 14, amounting to one half; but of the secondary amputations, properly so called, a fraction less than one-half were lost, 5 in 11. These cases form the forlorn hopes of surgery; all saved are snatched from nearly certain death.

Mr. Alcock says a few words on the comparative fatality of injuries of the different articulations.

The hip is more rarely the seat of direct injury from foreign bodies than any of the articulations. The result is generally fatal; three in four died; and in the fourth, where recovery took place, the joint itself, there is some reason to suspect, was but remotely affected.

The shoulder is rarely implicated directly by injury without a subsequent operation, amputation, or excision of the head of the humerus, being required. In 11, which occurred in the series of 82, only 2 were cured without amputation; 7 amputations were performed, 6 primary, and 1 intermediary; the latter was unfortunate in its result; all the primary recovered.

Amputation of the shoulder is a successful operation. In 9 cases there was but one death.

Injuries of the knee are the most numerous, and with the exception of the hip, the most fatal to life, and generally, at best, leading to the loss of limb: of 35 of the knee, 22 lost their lives, and of the remaining 13 who were saved, 8 lost their legs. The primary amputations amount to 9, and 4 died: they are decidedly more trying injuries to the system than those of the shoulder, not only by the double shock being greater, as proved by this result, but by the gravity of the actions, to which the original injury gives rise. Thus there were 3 intermediate amputations, and 9 secondary, and only 4 recovered out of the 12, or one-third, two-thirds dying.

Injuries of the elbow stand next in order of frequency, making a total of 19 cases, 5 of which were fatal; 10 were cured without loss of limb, but nearly all with ankylosis, complete or partial; 1 died during the attempt to save the limb, at the 120th day, of angina pectoris; 4 out of 7 primary amputations died, all with disease of chest or liver; 1 secondary amputation recovered.

The ankle is not often injured directly. There were but 6 cases; 1 died,

and that from effusion into the serous cavities, anasarca, the limb erysipelatous and gangrenous; 3 required amputation, 1 primary, 2 intermediary,—all recovered.

The wrist is, upon the whole, more frequently injured, but in no proportion to the knee, and much less often than the elbow or shoulder. In 7 cases included in the series of 82, all recovered; 1 after secondary amputation.

Mr. Alcock has not included gun-shot fractures of the bones of the hands and feet in the returns of injuries of the joints—the articulating surfaces escaping serious damage surprisingly. And indeed the large bones may be splintered or perforated close to the great joints, without the latter being implicated.

3. Causes of Death.

Of forty-three fatal cases—

23 died under treatment for the original injury.

4 — after intermediary amputation.

5 — after secondary amputation.

11 — after primary amputation.

—
43 Total.

Of the 23 that died under treatment—

11 died of a wasting discharge and febrile action—hectic fever chiefly; the demands on the constitution great; the diseased action unconquered; disease from 8 to 72 days' duration;

2 with chronic tetanus, and one of these accompanied by hectic fever, the other by organic disease, namely, congestion of lungs, and abscesses of the left lobe of the liver;

1 from mortification;

1 delirium tremens;

1 with secondary hæmorrhage;

2 one with effusion into the serous cavities, and the other angina pectoris, both chest affections;

2 from the effects of other grave injuries;

1 from shock;

2 from causes not known.

—
23 Total.

Mr. Alcock does not conceive that injuries of the articulations are peculiarly prone to be followed by "purulent disease"* elsewhere. Nor do we see any reason why they should be so.

"In the injuries of the articulations for which amputation was performed, there were twenty deaths; and in seven the chief cause appeared, after death, to be purulent diseases in distant parts.

In gun-shot fractures not connected with the joints, the number of deaths after amputation was thirty-five. In eleven, the same effects were observed; one was of doubtful character, the cavity not having been examined; and two had

* By this expression we presume Mr. A. intends to designate the secondary inflammations and deposits.

pus in the blood-vessels, one in the femoral vein and artery, the other in the femoral vein alone.

Does this result depend upon the original injury? or is it to be considered as an effect of the amputation? The larger number after amputation must prove that the operation has a powerful influence, while the occurrence of precisely the same results in both sets of cases, in which no operation was performed, equally proves that amputation is, at least, not the only cause. Since both the injury and the amputation are each followed by these results, although in very different proportions, it seems most probable that in the greater numbers presented by amputations, the two shocks of the injury and the operation combine to produce this fatal effect.

This view is borne out by the fact, that such causes of death occur in the great majority after *primary* amputations, and not after those performed in subsequent periods, least of all in the secondary period.

In the injuries of the articulations, only one occurred after intermediate, and none after secondary amputation; and in fractures only two cases, in like manner, after intermediate amputation. Thus the operations of the period nearest to the primary are the only ones that are followed by these peculiar effects in the series under consideration." 284.

Our author presents a resumé of the causes of death in the four classes, which shews that the chief danger and cause of death in cases treated to the end without operation, is hectic fever; and a variety of accidental or irregular complications, such as secondary hæmorrhage, epidemics, erysipelas, gangrene, &c., combined, form the remaining half.

The cases in which amputation is performed in the first instance, with fatal result, present a very different cause of mortality: the chief agent being purulent disease of lungs or liver, and occasionally inflammatory affections of the lungs or pleura. Fevers irritative or bilious destroy more than one-third.

The deaths after intermediary amputations are chiefly caused by febrile action, irritative or bilious; and in secondary amputations, the shock of the operations, hectic, and some accidental complications carry off the patients, already much reduced by suffering and the long continuance of wasting discharges. The results of secondary amputations, when fatal, and their causes of mortality, are in some degree assimilated to those predominant in cases treated to the end without operation.

Mr. Alcock furnishes three other returns, with the view of shewing the influence of favourable and unfavourable collateral circumstances. They exhibit in a striking manner the low mortality in the former, the high in the latter. But for this we must refer to the memoir itself.

The Third Part of that memoir is devoted to the,—

CLASSIFICATION OF KINDS OF INJURY IN WOUNDS OF THE ARTICULATIONS.

Mr. A.'s object is, if possible, to supply a *definition of those kinds of direct injury, in which we shall be justified in making the endeavour to save a moderately useful limb.*

I. After relating three cases, Mr. Alcock draws these conclusions from them.

1. A mere fissure of a joint, extending from a fracture, partial or complete, is not necessarily followed by severe, extensive, or destructive action

in the structures of the articulation. If any other attendant circumstances, therefore, do not forbid, the attempt may be made to save the limb, with a fair prospect of a favourable result.

2. A foreign body, a musket-ball, for example, lodged either in the cancellated structure of the tibia or femur, may or may not penetrate the articulating surface, or project beyond it.

He continues.—“ If it do not penetrate to the articular surface, it does not necessarily implicate the joint, or lead to any diseased action therein, and may at some later period be removed, if that be not possible at the time. If it do penetrate, but be smooth in surface, and not projecting beyond the level of the articulating surface, the same rule holds good, viz., that violent diseased action is by no means a necessary consequence, and I have been led to believe that in such a case, ankylosis, and a useful limb may, in many instances, be the result of careful treatment.

If the missile project, or if it be roughened, or cause any jagged projection of bone, the most destructive and rapid disease of the whole articulation follows, and in the knee especially, will inevitably lead either to amputation or death. In the elbow I have known such a case saved; in the knee never.

The following is the line of practice, therefore, which it seems to me should be acted upon. When any foreign body has penetrated the end of a bone forming an articulation, the surgeon should endeavour, by finger or probe, to obtain an accurate knowledge of its position. If he concludes, after such examination, that there is no projection into the articular surface, and it cannot be removed without great additional violence to the parts, such as burying the head of the trephine deep in the spongy end of a bone, the attempt should not be made, but the limb may be treated with a view to saving it. If we fail in this, a period will probably arise favourable to the performance of secondary amputation, and to its successful issue. If the ball has, on the contrary, penetrated into the joint, fracturing its way, and remaining either fixed or loose in the articulation, there is only one chance of safety for the patient's life, and none for the limb. Immediate amputation I believe to be the best and only judicious practice.” 300.

II. Our author proceeds with the relation of two other cases, from which, and from some like them, he concludes that—

When the end of a bone, entering into an articulation is traversed by any foreign body or missile, more especially if it pass between the condyles of the femur or humerus, even though the integrity of the capsule, at one or more points, should be injured, if there be no detached fragment of bone, the joint, in many cases, may be saved; and the attempt may generally with propriety be made, when no other injury or unfavourable circumstance is superadded.

III. A successful case, in which a musket-ball apparently traversed the knee-joint, without occasioning fracture of the bones, succeeds. And Mr. Alcock remarks upon it:

“ Upon cases of this class I have drawn the following conclusion. Wounds of the capsule, and even the traversing a joint by some missile or weapon, provided neither bone nor cartilage be seriously injured, do not require or justify amputation as a first remedy. The majority may be saved, even should the motion of the joint be more or less impaired; a useful limb may still be preserved.

Contrary to the general impression, I am strongly inclined to the conclusion, that injuries to joints are not fatal in proportion to the extent of surface laid

open. The most dangerous of these wounds I believe to be punctured, or such wounds as a musket-ball creates,—a small, lacerated, and contused opening, with more or less mischief to the external parts. The most violent inflammatory action ensues in the highly susceptible synovial membrane, which, for a certain period, or until disorganization (the result of violent action) takes place, still retains its distinctive characters of serous or synovial membrane. Fluid is effused and pent up—the whole limb becomes involved—the system takes the alarm, and sympathises often to a certain extent. No kindly suppurative and granulating action takes place over the surface of the synovial membrane, altering its characters and susceptibility,—a result which follows not unfrequently in a wound laying a joint fairly open, quickly destroying, of course, the texture and character of synovial membrane, and leaving ankylosis as the only favourable result possible. But under such injuries, this is the happiest result we can ever look for; and the patient who so escapes has reason to be well satisfied that he has lost only the motion of a joint instead of a limb, or his life, or, as frequently must happen, the one first, and the other afterwards." 307.

IV. Mr. Alcock relates the case of a young gentleman, who met with a severe accident in leaping a railing, consisting of parallel bars. His foot caught, and his body was precipitated over, while he hung, with his leg engaged between the bars, for some seconds, before he could be disengaged. The knee was partially dislocated, but reduced at the time. Great extravasation of blood occurred in the ham, a tourniquet was applied, the femoral artery was tied in the upper part of the thigh, mortification followed, and the patient died on the tenth day. The crucial and posterior ligament of the knee were torn; the semi-membranosus muscle torn from its tendinous sheath; the popliteal artery and vein nearly torn asunder; the joint, and all surrounding parts, loaded with extravasated blood; the nerve uninjured.

Commenting on this case, Mr. Alcock is inclined to think that when there has been great violence offered to an articulation, sufficient to produce dislocation, and evident injury to a large blood-vessel in the vicinity, an incision should be made down to the vessels, and the nature and extent of the injury ascertained. If the artery alone be implicated, the capsule not extensively lacerated, nor blood extravasated within, a ligature may be placed above and below the ruptured point of the artery, and the case treated with a view to saving the limb. If any of these adverse circumstances be found, amputation should be proceeded with.

There will perhaps be a difference of opinion among surgeons on this point. An incision in the midst of a great mass of extravasated blood (and a moderate extravasation would scarcely justify it) would be far from untended with serious danger of subsequent suppuration. And it would probably be likewise far from easy to discover or to tie the vessel under such circumstances. It must be owned that such a case is embarrassing.

We pass over a very interesting case under the care of that able surgeon Mr. White, of the Westminster Hospital, as well as a case in which the heads of two or three of the metacarpal bones were partially removed by a circular saw, with much laceration of the soft parts, and turn to the last case related by our author.

A gentleman, in 1635, was thrown out of his gig, and fractured the upper third of the ulna into the elbow joint. He was a stout muscular man, and considerable swelling supervening, before his surgeon saw him, the fracture

did not seem to have been discovered until some degree of union had taken place, and that at such an angle, that a sharp peak projected at the posterior surface, rendering any attempt at flexion painful in the extreme, "cutting like a knife," as the patient described, from the stretching of the skin over the sharp end of bone. Gentle passive motion and friction had been employed when Mr. Alcock saw him. Mr. A. came to the opinion that mere ligamentous bands, uniting the two fragments at an angle, prevented the flexion of the arm, and that it required regulated, but considerable force, to elongate these. Before it could be attempted, the sharp projecting end of bone required removal. Sir A. Cooper concurred with Mr. Alcock, and the latter removed the projecting end of bone, and, as soon as the incision was soundly healed, he employed, morning and evening, a moderate degree of forcible extension, gaining by measurement, a very little each two or three days, but never proceeding so far as to excite inflammation. The case rapidly improved, and he has long recovered the perfect use of his arm, can carry his hand to the shoulder of the same side, row, &c., without pain or difficulty.

Mr. A. concludes, from cases of this description, that, wherever a partial ankylosis takes place, proving that there is not that kind of bony union, (of which there is a fine example among the specimens,) and no fragment of bone locks, so as to give the conviction, that unless it be broken, no farther progress can be made, the limited motion will generally be found to depend upon ligamentous bands or adhesions, which will elongate by the judicious use of force, to be employed twice daily, neither violent, nor long-continued, but so as perceptibly to gain by measurement, something, however little, each two or three days. In such cases, the gentle kind of passive motion, together with the frictions generally recommended, are perfectly inadequate, and altogether useless, except during the first few days after union, to facilitate the absorption of the effusion and thickening which may remain in the soft parts.

Mr. Alcock winds up this valuable memoir with a classification of injuries of joints, in reference to the principle of their treatment.

First Class.

1. Incised or lacerated wounds penetrating the capsule.
2. Penetrating wounds, with partial abrasion or contusion of articulating surfaces.
3. Simple fractures into joints, with more or less displacement, and subsequent confined ligamentous union.
4. Fissuring of articulating surfaces, from compound fractures, complete or partial in the vicinity, but without displacement of bone within the capsule.

"In this first class are included those cases, the great majority of which may be saved, and when it should be a principle of practice to attempt it. Of course, in the last division, fissuring from compound fractures, much judgment is required, to determine the curability of the fractured limb; the rule laid down is applicable only *quoad* the articulation. Moreover, in cases of fissuring from compound fractures, it will often happen, that only the head, or head and neck of the bone may be seriously damaged, and this, either with or without a foreign body lodging. Several fine specimens of this kind of injury are among my pre-

parations. Here the limb may be frequently saved, as I have already shown, though not the joint, by excision of the head of the bone, or removal of the fragments." 318.

Second Class.

1. Foreign bodies lodged in the ends of bones, either not presenting in the articular surface, or on the same level and smooth.
2. Foreign bodies traversing the ends of bones, without detaching fragments from the articular surfaces.
3. Internal laceration of ligamentous structure, with lesion of blood-vessels, and with or without temporary displacement of articulating surfaces.
4. Separation of shaft from epiphyses with possible laceration of capsule, but not extensive.

This is a sort of *intermediate* class between those in which the rule is to attempt to save, and those in which the rule is the reverse.

Third Class.

1. Compound fractures into joints, with displacement and roughened edges.
2. Foreign bodies projecting into articulation, or traversing with extensive injury to structure.
3. Lacerated wounds of capsule, with much contusion and injury to internal structure of articulation, and with extravasation of blood into the joint.

The plan, here, should be to amputate without delay, unless excision of the head of the bone be deemed advisable. In the second kind of injury in this class Mr. Alcock has never known recovery to take place, when any of the large articulations were affected, rarely even when the injury was in the smaller.

"An extensive injury to a joint will sometimes destroy the patient by the shock. Or a wound of an articulation may be complicated with some other grave injury; such as a penetrating wound of the chest. Unless the second wound be of fatal character, I do not think it should prevent the necessary steps being taken with reference to the joint. In one such case, I amputated at the shoulder joint, and although the patient ultimately died, having been seized with a bilio-remittent fever, which attacked nearly all the amputations of the period, he did not die till the thirty-first day: the *lung, however, presented no trace of active disease*, although the wound was in the chest, the morbid actions seemed to have been expended upon the vicinity of the articulation.

The most excessive action sometimes follows a slight injury, and I have known erosion of the cartilages take place in five days. In another case, a superficial wound of the inside of the knee seemed to develop the most frightful actions, local and general, destroying the limb with suppurative disease, and consuming all vital power by fever. The ball which had curved down towards the hamstrings, but still superficially, I removed on the sixth or seventh day, and he died about the fifteenth.

At other times there will be, comparatively, little action in the joint itself, and the whole mischief be expended below; or again, I have known a joint filled with pus, but no erosion or alteration whatever in the cartilages.

It is worthy of remark, also, that a joint often becomes secondarily affected, and with so little attendant pain, as to escape observation for some time." 322.

We think Mr. Alcock entitled to the thanks of the profession for this very able and useful paper. It will tend to direct attention to injuries of the joints and to give precision to our views in treating them.

VI. ON ANEURYSMS, AND ESPECIALLY SPONTANEOUS VARICOSE ANEURYSMS OF THE ASCENDING AORTA, AND SINUSES OF VALSALVA. WITH CASES. By JOHN THURNAM, Esq.

Mr. Thurnam, a gentleman well known to our readers by his zealous investigation of several pathological points, has contributed an able memoir on aneurysm of the ascending aorta. We shall notice the principal points in it. Mr. Thurnam observes :—

“In consequence of witnessing a remarkable case of aneurism of the right aortic sinus of Valsalva, which opened into the right ventricle, (see case 7,) my attention became directed to the probable effects of aneurisms of each of the three aortic sinuses, especially in relation to the particular cavity, whether of the heart, of a blood vessel, or of the pericardium, with which, in case of their becoming ruptured, they would probably communicate. I have endeavoured to determine this question, by two modes of investigation : 1stly, by anatomical examination and experiment, and 2ndly, by comparing the results of cases of aneurism thus limited, whether recorded in the annals of medicine, preserved in museums, that I have visited, or occurring under my own observation.” 325.

Omitting a brief, but sufficient, account of the relations of the ascending aorta, we pause at a description of the sinuses of Valsalva—three roundish dilatations corresponding to the three semilunar valves.

“These sinuses have, hitherto, not been generally indicated by names ; for the sake, however, of convenience in this paper, I shall speak of them as the right, left, and posterior aortic sinuses. By the right and left, I mean the two sinuses which are seated anteriorly, and from which, respectively, the right and left coronary arteries arise ; and by the posterior, I intend that which does not give origin to any coronary vessel. The term posterior, which is sanctioned by the authority of Valsalva himself, appears to me to indicate the position of the sinus last alluded to, better than that of ‘intercoronary,’ which has been applied to it by M. Bizot. All the sinuses are imbedded in the soft fat, generally found at the base of the heart ; but the right is seated more superficially than either of the other two.

By passing needles through the coats of the aorta, in the situation of the sinuses, I have ascertained, that when affected by aneurismal or other disease, any one of them might become ruptured into the pericardium ; but that the right is more liable to do so than either of the others. By the same means, I have found, firstly, that the right sinus might form a communication with the top of the right ventricle, with the pulmonary artery, or with the right auricle at the mouth of the appendage ; secondly, that the left aortic sinus might become ruptured into the left auricle, the left ventricle, or the pulmonary artery ; and thirdly, that the posterior aortic sinus might open into either the right or left, though more readily into the right auricle. I have likewise found that the ascending aorta, for some distance above the valves, has very similar relations to the adjacent parts as the sinuses themselves ; but that, as indeed is obvious from simple inspection, the relations of aneurisms of the higher part of the ascending aorta, are with the superior vena cava on the right ; the pulmonary artery on the left ; the pericardial cavity in front ; and with the right pulmonary artery and veins, and with the right, and in a less degree, the left bronchus behind.” 327.

Liability of the respective Sinuses to Aneurysm, and their relation to adjacent Parts.

The Paper contains references to eighteen cases of aneurysm, more or

less accurately limited to the aortic sinuses. In two of these cases there were aneurysms so limited in two of the sinuses; and, in another instance, the three sinuses were all affected. Of these twenty-two aneurysms, twelve were seated in the right, four in the left, and six in the posterior aortic sinus. Thus the right sinus *seems* more liable to aneurysm than either of the others. Of the twelve aneurysms seated in the right sinus, two were of an incipient form, and, doubtless, projected into the pericardium; two had ruptured into that cavity; six projected into, and one had actually formed a communication with the highest part of the right ventricle. Of the four aneurysms seated in the left sinus, one had become adherent to the left auricle; and another had formed a large tumor in the upper part of the left ventricle. Of the six aneurysms seated in the posterior sinus, two were incipient, and probably projected into the pericardium; one projected, as a round tumor into both the auricles, but principally into the right; and one probably had become ruptured into the sinus of the right, and another into that of the left auricle.

Mr. Thurnam thinks that that portion of the ascending aorta which is immediately above the valves, is probably even more liable to circumscribed true aneurysm than are the sinuses of Valsalva themselves. But he is inclined to believe that those portions of the ascending aorta which are directly above the attachment of the semilunar valves, and which consequently are seated above and between the aortic sinuses, are more liable to the formation of aneurysm than are the intermediate portions. He is able to refer to ten cases thus seated. Of the eight aneurysms seated above the attachment of the right and left aortic valves, three had become ruptured into the pericardium; one projected, and threatened to burst into the right, and another into both the right and left ventricles of the heart: whilst, in four cases, the aneurysmal sac was ruptured into the pulmonary artery. In one case seated above the insertion of the right and posterior valves, the sac had become ruptured into the right auricle; and in another, above that of the posterior and left, the sac appears to have projected into the sinus of the left auricle, and had become ruptured into the pericardium.

Varicose Aneurysm.—This, and aneurysmal varyx have till lately been regarded as necessarily preceded by a wound of the artery and vein. But says Mr. Thurnam—

“Previously, however, to the publication of the memoir of M. Breschet, Mr. Syme had narrated an interesting case of spontaneous varicose aneurism in the abdominal aorta and cava. Two important cases likewise, the one by Mr. Porter, and the other by Mr. J. G. Perry, in which spontaneous varicose aneurisms existed in the popliteal and femoral arteries and their accompanying veins, have also been published; for the precise nature of the latter case having been established by dissection, that of the former appears to me no longer conjectural.” 330.

Mr. Thurnam points out the peculiar liability of the ascending aorta to varicose aneurysm, from its anatomical relations, and he adds,—

“It may perhaps be necessary in this place to meet the objection that very possibly will be made, that to call an aneurismal sac which has ruptured into one of the right cavities of the heart or into the pulmonary artery, a spontaneous varicose aneurysm, is a ‘pathological transcendentalism,’ ‘founded on a far-

fetches, though ingenious, analogy.' I have, therefore, been gratified to find since a great part of this paper was written, that Mr. Smith of the Richmond Hospital, Dublin, has taken a similar view of the subject; and has anticipated the probable occurrence of such a lesion as spontaneous varicose aneurism, in the very centre of the circulating system. In remarking on a case to which I shall have to allude, and the preparation of which I have had the advantage of inspecting in his company, Mr. Smith observes, 'had the sac yielded where it projected into the right ventricle, there would have been formed a varicose aneurism of a new and extraordinary description, and I should think not of necessity at once fatal.'

But it is not merely on speculative grounds that I would contend for this view of the subject; for, as I hope to show, there is somewhat more than a general analogy between the phenomena presented by the ordinary varicose aneurysm of the extremities and those observed in the cases under consideration." 332.

Mr. Thurnam details in succession the following cases—

1. Spontaneous varicose Aneurysm of the Abdominal Aorta and Vena Cava.
2. A similar case.
3. Spontaneous varicose Aneurysm of the abdominal Aorta and Vena Cava. Death in a few hours after the probable period of formation of the opening.
4. Spontaneous varicose Aneurysm of the ascending Aorta and Superior Vena Cava.
5. Spontaneous varicose Aneurysm of the ascending Aorta and appendage of the right Auricle.
6. Spontaneous Varicose Aneurysm of the three Sinuses of Valsalva, right Auricle and Termination of the Superior Cava.
7. Spontaneous Varicose Aneurysm of the Right Aortic Sinus and summit of the right Ventricle of the Heart.
8. Spontaneous varicose Aneurysm of the ascending Aorta and Pulmonary Artery. Death nine hours after the probable period of formation of the opening.
9. Spontaneous varicose Aneurysm of the ascending Aorta and Pulmonary Artery.
10. Spontaneous varicose Aneurysm of the Aorta and Pulmonary Artery. Death in about twelve hours after the probable period of formation of the opening.
11. Spontaneous varicose Aneurysm of the Arch of the Aorta and the left Pulmonary artery, corresponding to the situation of the Arterial Duct.
12. Spontaneous varicose Aneurysm of the ascending Aorta and Pulmonary Artery. Sudden death at the time of the probable formation of the opening.

Such of our readers as are anxious to peruse these cases we must refer to the volume of Transactions that contains them. We proceed to the conclusions which Mr. Thurnam draws from them. We should observe, that, in addition to the twelve cases whose titles we have given, Mr. T. describes, in a note, the preparations from six others, in which spontaneous varicose aneurysms had existed. Of all these, three were seated in the descending aorta and vena cava. The others, excepting one in the arch, were all seated in the ascending aorta or its sinuses; and communicated, one with the superior

vena cava, two with the right auricle, one with the right ventricle, and eleven with the pulmonary artery.

History.—The twelve patients were all of the male sex. Two were from twenty to thirty, four from thirty to forty, two from forty to fifty, three from fifty to sixty, and one sixty years of age. One was by profession a merchant, one a coachman, much exposed to wet and cold, one a butler, one a baker, one a tinsmith, and another a porter: the three latter were all accustomed to lift heavy weights. The profession of the six other patients is not stated; excepting that one of them was a gentleman.

The habits of the merchant and baker were temperate; of the coachman, tinsmith, and another, decidedly intemperate; whilst those of the other seven are not stated. One had sustained an injury on the back two years and a half before; another had complained, for two years, of severe pain stretching across the loins; and two had suffered from acute rheumatism, the one ten, and the other thirteen years before the appearance of symptoms of aneurysm. One had had an attack of hemiplegia nine years previously, and had complained of pain and swellings in the hands and feet, for two years before the attack; one had suffered from dyspnoea and palpitation, during the greater part of his life; one from slight bronchitic symptoms and præcordial uneasiness for some months; and another from marked symptoms of disease of the heart, during six months.

Mr. Thurnam properly observes that the foregoing features rather bear on the etiology of aneurysm generally, than on that of spontaneous varicose aneurysm in particular.

Mr. Thurnam proceeds to observe that the communications between the artery and vein would seem to be formed in one of two principal modes. In six of the cases, the opening into the venous system seems to have been formed very suddenly; in consequence, in four of them, of some more or less unusual exertion or effort, previously to which the patient had been in ordinary health. In two of these cases, the effort consisted in raising heavy weights; in one, in playing with children, after a fatiguing walk, which had been followed by a hearty meal; and probably in the other, it was the result of the action of drastic purgatives.

In these cases the aneurysmal sacs were, no doubt, ruptured. In the first of the four, the symptoms consisted of a sensation of something giving way in the chest; in the next, of faintness, dyspnoea, and palpitation, with pain, and a sense of something cracking about the heart; in the next, of vomiting, oppression in the chest, and a constant desire to cough, with bloody expectoration; and in the last, of a sudden increase of dyspnoea and feebleness of pulse. In two cases likewise, where the patient does not seem to have been exposed to any particular exertion, the preternatural communication was evidently formed in an equally sudden manner; and was indicated, in the one, by great depression and violent vomiting; and in the other, by severe dyspnoea and insensibility.

In most of the cases, however, the openings probably resulted from a gradual softening, or ulceration of the walls of the sac. For, in three, the mode of attack is not particularly specified; in another, however, we find that there was no sudden seizure, but that the patient suffered for some time, from pains in the neck and shoulders, which ceased more or less com-

pletely, as the symptoms of the varicose communication appeared. In the three cases in which the aneurysms were seated in the descending aorta, the symptoms were preceded by pains in the region of the back; and, in the two former of these also, there appears to have been no sudden seizure.

Symptoms.—Mr. Thurnam regards these in connexion; 1stly, with the external surface and system generally; 2ndly, with the respiration; and, 3rdly, with the state of the heart and great vessels.

1. Excepting, writes Mr. Thurnam, two or three cases in which the patients died almost immediately, the external surface in all presented very decided signs of an obstructed circulation. In four, the animal heat appeared to be more or less remarkably deficient. In six the surface, especially that of the face, was livid or bloated; and in one of these the livor extended to the mucous membrane of the fauces and soft palate, the colour in the face being of a peculiarly pallid character. In one of the cases, in which the descending aorta and inferior cava were the seat of the lesion, the veins of the abdominal parietes were large, tortuous and distended. In the two cases in which the opening was in the superior cava, many of the superficial veins of the upper half of the body, particularly those of the face, neck, front of the chest, and back, were permanently distended, and almost varicose. A similar but more general condition of the superficial and other veins, also existed in two other cases.

Dropsical infiltration of the surface was the most uniform symptom noticed, and was present in all the cases, eleven in number, in which the symptoms are detailed, excepting three, in which death very speedily occurred after the formation of the varicose opening. The anasarca in all was very decided, and advanced very rapidly: in one case, it made its appearance on the twentieth day from the date of the intervascular communication. It involved all those parts of the body, the veins of which were distal to the opening in the venous system. Thus in the case in which the aneurysm opened into the superior cava, and in that in which it opened into the top of the right auricle, the anasarca of the face and arms was remarkably contrasted with the uninfiltrated state of the lower half of the body. In two cases, in which the abdominal aorta and inferior cava were the seat of the varicose aneurysm, the anasarca of the legs and lower half of the body was equally strongly contrasted with the free, and in one case, emaciated state of the arms.

In three other cases, in which the aneurysm opened into the appendix of the right auricle, the right ventricle, and the pulmonary artery respectively, the venous system of the whole body being distal to the varicose orifice, we find that the dropsical infiltration was little short of being universal; though, as in all cases of general dropsy, the lower extremities were most decidedly affected. There was, likewise, more or less ascites in these three cases. The extreme debility, also, with emaciation, which was noticed in two of the cases, ought, probably, to be regarded as a symptom proper to the lesion under consideration. In one instance, sloughy sores formed on the shins; and in another, sloughing of the scrotum supervened on the operation of acupuncture.

2. Excepting two cases in which this symptom is not mentioned, there was more or less dyspnoea in all; but in four the oppression and difficulty

of breathing were not very severe, excepting, in most of them, towards the fatal termination, and were chiefly noticed after exertion. In the other six cases the dyspnœa was extreme, and amounted to orthopnœa, in the two former, of a most aggravated character, the patient dying from a slowly developed apnœa (asphyxia). There appears to be reason for believing that the urgency of the symptoms generally, and especially of the dyspnœa, is in proportion to the size of the opening into the vein, and to its proximity to the lungs; and, consequently, that this symptom, *ceteris paribus*, is more severe when the aneurysm communicates with the pulmonary artery, than when it opens into the inferior or superior cava. Cough is stated to have been present in every case but five; and in several instances it was particularly distressing. It was almost uniformly attended by expectoration; and in two cases only, where there was cough, is this symptom not mentioned. The sputa were more or less mixed with blood in three of the cases.

But to appreciate the cause of the dyspnœa, it is necessary to look to the condition of the lungs and pleuræ. In one case, the pleuræ were uniformly adherent, and in seven hydrothorax, to a greater or less extent, was present; though, perhaps, in four cases only, was the fluid in such quantity as to have materially affected the respiration. It is most probable, that this effusion into the pleural cavities is to be regarded as a consequence of the varicose communication. In one case, there was pulmonary apoplexy; but, excepting for the most part, slight congestion and œdema of the tissue of the lungs, in five or six instances, these organs appear to have presented no other lesion. It may then be observed, that the severity of the dyspnœa, &c., in very few of the cases, bore any proportion to the degree of pulmonary complication; consequently we must, in the main, attribute these symptoms to the varicose aneurysm.

3. In five of the cases, continues Mr. Thurnam, there were palpitations of the heart, and, in one, præcordial pain. As, however, these were precisely the cases in which the heart itself presented the most decided traces of disease, in the shape of hydro-pericardium, dilatation and valvular lesion, it is doubtful how far we can look upon the symptoms alluded to, as directly belonging to the varicose communication. The pulse presented distinctive characters in all the cases, eight in number, in which it is noticed; if we except one, in which it is briefly stated to have been "hard," a character which it is difficult to reconcile with a communication between the ascending aorta and vena cava. In four of the cases, the pulse was decidedly "jerking;"—the terms, "vibratory," "hæmorrhagic," "resilient," and "thrilling," applied by three of the observers, evidently referring to one and the same character. In another case, it was stated that there was a distinct interval between the impulse of the heart, and the pulse, as felt at the wrist. In the other two cases, the pulse was chiefly distinguished by being extremely feeble; and this was likewise the case in two of the instances in which it was jerking. In one, the pulse was much weaker in the left than in the right wrist; and in three cases, it became either intermittent or irregular in the progress of the disease.

Physical Signs.—"In the first only of the two cases of varicose aneurysm of the descending aorta and inferior cava, were the physical signs noted; and in this they consisted of a pulsating tumour of the abdomen, with an incessant

whizzing sound proceeding from the same part, and audible both to the patient himself, and to those around. In the case in which the aneurism opened into the superior cava, there was a distinct impulse detected under the right clavicle, and on the right border of the first piece of the sternum; and a loud murmur was also heard in the same situation. In the case in which the aneurysm communicated with the appendage of the right auricle, a distinct pulsation and a bellows murmur were also perceived on the right of the sternum.

In the instance in which the varicose communication existed between the ascending aorta and the upper part of the right auricle, there was a loud double bellows' sound, which was particularly heard over the upper part of the sternum; the systolic portion of the sound was more prolonged, the diastolic sharper and shorter.

The physical signs, as observed by myself, in the case in which the aneurysm opened into the summit of the right ventricle, differed remarkably from the preceding, as to the situation in which they were heard. There was dullness on percussion in the præcordial region, which extended to the level of the second rib. The healthy sounds of the heart were scarcely audible, and that only in the arteries of the neck. Throughout the præcordial region, and indeed over nearly the whole thorax, a continuous sawing sound was heard. This sound was loudest during the systole, less loud during the diastole, and still less so during the interval: it was most distinct in the second intercostal space, about an inch and a-half from the sternum; where, in a spot that might be covered by a shilling, it was intensely loud and superficial; and in the same spot there was a most distinct and superficial purring tremor. In this case it is to be recollected that the heart was displaced somewhat to the left, by dropsy of the right pleura. Dissection proved that the spot where the murmur was heard and the tremor felt most distinctly, corresponded precisely to the situation of the varicose orifices.

The physical signs in the first of the cases of varicose aneurysm, connected with the pulmonary artery, were not at all noticed, but it is to be observed that this occurred prior to the great discovery of Laennec. In the next case, in addition to increased though not forcible impulse, and dullness on percussion, in the region of the heart, there was a loud blowing sound heard over the front and back of the chest, but most distinctly at the middle of the sternum. In this case also the murmur would appear to have had a continuous character. In the remaining cases the physical signs do not appear to have been noticed, at least not after the formation of the varicose opening." 369.

There were in several of the cases other symptoms not of so specific, or distinctive a character—such as dizziness, a blood-shot state of the eyes, impairment of speech, hæmaturia, and melæna.

Pathology.—When, says our author, a communication exists between the ascending aorta and an adjoining part of the venous system, the arterial blood, in consequence of the greater power of the left ventricle, is propelled through the opening, becomes mixed with the venous blood, and is carried forward with it to the lungs. The pathological effects consequently resulting, are hence obviously referrible to one of three circumstances.

In the first place; a portion of arterial blood is abstracted and regurgitated from the arterial system; and the arteries, consequently, are imperfectly filled. As a consequence, the pulse is feeble, and peculiarly jerking; the surface, and especially the countenance, loses the ruddy hue of health; the animal heat is diminished; and, the various organs being imperfectly nourished and stimulated, there arise emaciation, debility, loss of muscular

power, with a disposition to syncope, to gangrene, and even to softening of the heart and internal viscera.

Secondly; the stream of arterial blood, which is constantly passing into the venous system, acts as a direct and powerful impediment to the return of the venous blood from the veins distal to the varicose orifice; and this is an effect which, in some cases, is assisted by the pressure of the aneurysmal tumor. Hence arise, in the parts so situated, livor of the skin and mucous membranes; venous congestion of the glandular system, especially the liver; engorgement and dilatation of the right cavities of the heart; distention, and a varicose condition of the sub-cutaneous and deep-seated veins; passive hæmorrhages; dropsical effusions, especially in the shape of anasarca; and venous congestion of the brain, with comatose and apoplectic symptoms.

Thirdly; the circulation through the lungs of a portion of already arterialized, in a state of mixture with the impure venous, blood, and in vessels not intended for its reception, acts, in all probability, as an abnormal stimulus or irritant to the pulmonary organs. We consequently have dyspnoea, cough, and the secretion, from the air cells and bronchial tubes, of a more or less viscid mucus, often tinged, or even mixed, with blood; and the lungs, after death, are frequently more or less congested, and may even be the seat of apoplectic effusions.

Mr. Thurnam says a few words on the rationale of the physical signs of varicose aneurysm of the aorta. What he does say appears to us exceedingly judicious.

"As a consequence of the superior force of the left ventricle, the arterial blood is doubtless propelled through the varicose orifice, and so produces the murmur. During the systole of the heart, the current through the orifice is the strongest, and the sound consequently is then the loudest. During the diastole, in consequence of the elastic reaction of the arterial system on its contained blood, a less powerful current is propelled through the opening, and at that time, a somewhat weaker murmur is heard. This reaction of the arteries, however, is in operation, not only during the diastole, but also during the interval, and, in fact, until it is overcome by the succeeding ventricular systole; consequently, though the current is stronger at the commencement of this reaction, and synchronously with the diastole, yet is it also continued during the interval. Hence, the murmur is a continuous one; it being present, though much weaker, during the interval between the diastole and the succeeding systole. The same circumstances which produce the murmur, of course occasion the purring tremor. I think there can be no doubt but that the extremely loud and distinct character of the murmur and tremor, are due to the generally small varicose apertures, through which the blood is propelled into the vein or right cavity of the heart; and that their intensity will be found to be in a direct ratio to the smallness of the aperture, and to the proximity of this to the walls of the chest. Like all other organic murmurs, the sound will be heard the loudest over the orifice in which it occurs; and, like them, will be propagated in the direction of the circulation beyond. Consequently, when the aneurysm opens into the vena cava superior, or the right auricle, it is on the right border of the upper half of the sternum, that the sound will be chiefly heard, and the tremor felt; but, when the communication is with the summit of the right ventricle or pulmonary artery, it is on the left border of the upper third or half of the sternum, that the sound and tremor will be the loudest and most distinct." 373.

Diagnosis.—Mr. Thurnam thus enumerates the diagnostic signs:—

General signs.—1. Severe and rapidly advancing anasarca, of such portions of the body as are below, or the venous system of which is distal to, the varicose orifice. When the varicose aneurysm is between the descending aorta and inferior cava, the legs, scrotum, and lower half of the body; when between the ascending aorta and the superior cava, the arms, face, and upper half of the body; and when between the ascending aorta and one of the right or left cavities of the heart, or the pulmonary artery, the whole of the body is the seat of the dropsical effusion.

2. Livor of the face particularly, but likewise, in a less degree, of all such portions of the body as are below the varicose orifice.

3. A distended, and even varicose, condition of the subcutaneous and other veins, distal to the orifice.

4. Dyspnoea; often amounting to orthopnoea and terminating in apnoea.

5. Cough, with expectoration; especially if the sputa be bloody.

6. A remarkably jerking, and in some cases, very feeble pulse.

7. Emaciation, debility, loss of muscular power, deficient animal heat and sensorial disturbance, may be looked upon as somewhat less frequent and certain signs.

Physical signs.—8. A superficial, harsh, and peculiarly intense sawing or blowing sound, accompanied by an equally marked purring tremor, heard over the varicose orifice, and in the current of the circulation beyond it; this sound is continuous, but is loudest during the systole, less loud during the diastole, and still less so during the interval. The characters of the sound, as regards intensity and continuousness, will probably altogether distinguish it from any that is heard in ordinary cases of aneurysm, or valvular disease of the heart. In the case of a varicose communication between the aorta and superior cava or right auricle, when there is no displacement of the heart, the sound will be heard and the tremor felt, along the right border of the sternum; and will, generally, be the loudest about the second right intercostal space. When, however, the aneurysm opens into the pulmonary artery or summit of the right ventricle, the corresponding points on the left side will be the seat of the murmur; though this may, probably, sometimes be heard more distinctly nearer to, though still to the left of, the centre of the sternum.

When the history shows that the foregoing signs have been developed soon after some unusual effort, especially if that were attended by pain in the præcordial region and a disposition to syncope, the evidence of a varicose aneurysm of the ascending aorta is rendered nearly indisputable.

Prognosis.—This may easily be stated—death. The duration of the disease, dated from the formation of the varicose opening, appears only to be indicated with precision in four of the cases. In four of them, the cases had a general aspect, very much resembling that of rupture of the heart; and the patients survived, in one case only four minutes, and in the other three from nine to twelve hours each. In one of the other cases the patient lived a month; and in the other, eleven weeks and two days. The probable duration of the disease in the five remaining cases, was in one, about two months; in two, about four; in one, five; and in another, ten months.

Treatment.—Not much need be said on this. It must be palliative, and can consist only in local bleeding for the relief of congestions, diuretics, and slight diffusible stimuli.

Analogy with the ordinary Forms of Varicose Aneurysm, &c.

"According to M. Breschet, the latest and most accurate writer, at length, on this subject, the rational signs of varicose aneurysm of the extremities, consist of numbness, loss of power, diminished heat, a blueish or slightly violet tinge of the skin, and a small and feeble pulse (which Scarpa states to be likewise vibrating), in that portion of the limb which is beneath the aneurysmal tumour. Now the only signs of spontaneous varicose aneurysm of the aorta, that we should at all look for in cases seated in the extremities, and which are not mentioned, are the distended and varicose state of the veins, the œdema, and the symptoms referrible to the respiration. But when we recollect the free inosculation which exist between all the principal veins of the extremities, and the absence of such in the vena cava, right cavities of the heart and pulmonary artery, it is easy to perceive why œdema, and a distended or varicose state of the veins below the opening, should be absent in varicose aneurysms of the extremities; and why they should be present in the same lesion, when situate in the ascending or descending aorta. Again, the comparatively very small quantity of arterial blood which, in the former cases, circulates through the lungs, and the greater distance from these organs at which it enters the venous system, afford a sufficient explanation of the absence of dyspnoea, cough, and the other symptoms of pulmonary disturbance.

With respect to the physical signs of varicose aneurysm of the extremities, it may be observed that by all authors who have treated of them, from Dr. William Hunter downwards, they are stated to consist of pulsation and purring tremor, in the situation of the tumour, accompanied by a decided, and, in most cases, *very loud* murmur, which is said, by some, to be propagated up the vein. The murmur, which has been variously described as a humming, whizzing, hissing, or roaring sound, is in some cases not merely audible when the ear is applied over the tumour, either with or without the stethoscope; but is also, as in that of Mr. Syme, and in the fifth reported by M. Breschet, audible to the patient himself, and even to those at some distance around him. In many of the cases also the sound is described as being alternately louder and more feeble, synchronously with the motions of the heart, so that a *continuous* sound would appear to have been present." 379.

On Aneurysms of the ascending Aorta, ruptured into the left cavities of the Heart.

It has been seen, from anatomical examination and experiment, that aneurysmal sacs, when situated in certain of the sinuses of Valsalva, or in certain portions of the ascending aorta, would be likely to form communications, not with the right, but with the left cavities of the heart. In such cases, the lesion cannot, of course, be denominated a varicose aneurysm, though both the general and the physical signs would, probably, have much analogy to those belonging to such cases. Mr. T. relates two cases—the first, one of aneurysm of the posterior aortic sinus, communicating with the left auricle—the second, one of aneurysm of the left aortic sinus, projecting and threatening to become ruptured, into the left ventricle.

Mr. Thurnam concludes his highly interesting and valuable paper by a note:—

"Whilst this paper was passing through the press, two additional cases of

spontaneous varicose aneurysm were published. The one was seated in the ascending aorta and pulmonary artery, and the other in the common iliac artery and vein: they were communicated, the former by Mr. Smith, the latter by Mr. Adams, to the Pathological Society of Dublin, in April last." 384.

So that, from the publication of eight cases, in as many months, this lesion must be looked on as more than a pathological curiosity.

VII. CASE OF A RARE SPECIES OF HYDATID, (THE *ECHINOCOCCUS HOMINIS*.)
FOUND IN THE HUMAN LIVER. By T. B. CURLING, Esq.

A muscular man, aged 71, died March 18, 1841, in the London Hospital. There were disease in the left sterno-clavicular joint, congestion of the lungs, granular kidneys, and stricture of the urethra.

"On opening the abdomen, my attention was attracted by a cyst connected with the margin of the left lobe of the liver. It caused a tumor projecting from the gland, which was slightly adherent to the peritoneum, covering the pylorus and commencement of the duodenum. This cyst was of an oval figure, and measured about $2\frac{1}{4}$ inches in its long diameter and $1\frac{1}{4}$ inches in the other. A section displayed an old hydatid cyst varying in thickness in different parts, and fibro-cartilaginous in structure, lined by a soft loose albuminous membrane enclosing a large number of separate hydatid cysts of various sizes from that of a pea to that of a large cherry, surrounded by and floating in a transparent fluid. These cysts which were exactly similar in structure to the *acephalocyst*, being white, opaque, and divisible into layers, were also found to contain a perfectly limpid fluid which remained unaltered in appearance after one of the hydatids had been immersed for several minutes in boiling water. On opening a cyst there escaped a large number of small white particles, some of which were found floating in the fluid within; whilst others were in contact with the inner surface of the membrane composing it. The latter appeared like grains of white sand thickly studded over the interior of the cyst. On examination in the microscope, these little bodies were ascertained to be the vermiculi of the *Echinococcus*, all the characters of which were very distinctly perceived. They presented various appearances, according to the position of the animal submitted to examination. In some, of which we had a lateral view, we could see the prominent head surrounded by a circle of hooklets, two of the four obtuse processes or suckers and the round caudal cyst behind. The average length of these as measured by a micrometer was one-eightieth of an inch. In others again of which we had apparently an anterior view, the entire circle of hooklets were clearly discerned; in these the obtuse processes were invisible. Some of the animals represented in the plate seem to be in a less advanced state of development. A number of them of various forms were collected within thin pellucid vesicles or cysts, which being ruptured allowed of the escape of the animalcules, and a multitude of minute rounded particles immiscible in the surrounding fluid. During the examination I observed in the field of the microscope several detached spines which were sharp-pointed and slightly incurvated. Nothing was observed capable of throwing light on the mode in which these animalcules are developed. The containing hydatid is not propagated like the *acephalocyst* of man, in which the gemmule is detached from the interior of the cyst, but the young cyst is excluded from the external surface. In some of the larger specimens two or three young cysts of the size of currants were observed in progress of development between the layers of the parent cyst.

I have not been able to meet with any account of a case in which this rare and curious hydatid has been noticed in this country. In the Hunterian Collection, there is a preparation of the *Echinococcus Hominis* described in the printed catalogue as 'Hydatids, on the inside of which are small ones; human: two preparations;' but on inquiry of Professor Owen I find that there is no further account of it. The *Echinococcus Hominis* has been observed in only a very few instances on the continent, and neither Rudolphi nor Bremaer had met with it. A well-authenticated example of its occurrence in the human brain is published by Rendtorf in a Thesis on Hydatids. The account given of the animalcules discovered in that case is very imperfect and in the plate in which they are represented, but by no means well, only the coronet of hooklets is figured; the obtuse processes or suctorious mouths are not apparent. Müller has more recently described the case of a young man treated by Professor Necker for renal disease who voided with his urine a large number of these peculiar hydatid cysts. His description of the animalcules within them is minute, and accords very closely with this account which I have given of them, as observed in this case. He remarks however that the vermiculi were not present in all the hydatid cysts, but that the cysts which contained them were exactly similar to those which were devoid of them. In the case which I have here related the animalcules were detected in all the cysts examined in the microscope." 389.

Mr. Curling has found in the Medical Gazette (vol. xiii. p. 207.) a brief notice of a case of abscess in the liver, discharging echinococci through an opening in the parietes of the abdomen, by Mr. Rose of Swaffham, Norfolk.

VIII. OBSERVATIONS ON THE MODE OF UNION OF FRACTURES OF FLAT BONES.

By R. H. MEADE, Esq. Lecturer on Materia Medica at the Middlesex Hospital.

Mr. Meade observes, that the experiments to determine the mode of union of fractures have been made on the cylindrical bones. It has been stated that, in fractures of the bones of the skull, and also of the other flat, and of the spongy bones, union is effected without the formation of any external or provisional callus; but he can shew that this statement is not generally correct.

He has made several experiments on the scapula, which is easily fractured, and is essentially a flat bone; the two tables of which it is composed being in contact, in a great part of their extent: it contains however a considerable quantity of spongy tissue in the neck. The mode of union has been carefully observed in fractures traversing both these parts of the bone.

He relates the particulars of nine experiments, which we need not detail. From these he concludes it may be deduced, that union is accomplished in the thick part of this bone, exactly in a similar manner as it is in the cylindrical bones; viz. blood is first effused into the different tissues surrounding the fractured part; this blood is next absorbed, and coagulated lymph deposited in the substance of the muscles, and in the neighbouring cellular tissue, so as to form them into a solid gelatinous mass. The periosteum which has been ruptured, is separated from the fractured edges, and becomes inflamed and thickened: lymph, which is usually of a redder colour than that which forms the external callus, is also effused between the fragments

themselves. At a later period, the external mass decreases in size, the muscles return to their natural texture, and a firm layer of cartilaginous matter surrounds the fractured spot, with which the periosteum is blended. This callus adheres firmly to the surfaces of the bone and dips down between the fragments, the edges of which become rounded off by the absorbents. Ossification then takes place by the deposition of earthy particles in the cartilaginous matter.

The process by which union is effected in fractures of the flat part of the scapula differs in some respects from the preceding, and also varies in different cases, in consequence of some varieties in the mode in which the fracture has taken place. In those cases in which the bone has been completely broken through, with the periosteum covering it, as in experiments six and seven, very little injury seems to be occasioned to the surrounding soft parts; in consequence of the bone breaking very readily, from its thinness, and the fragments suffering but little displacement, and therefore giving rise to very little inflammation or deposition of lymph in the muscles and cellular tissue, except in the immediate proximity of the broken edges. A considerable quantity of callus, however, is deposited along the line of fracture, with which the periosteum is blended, as in the fractures of other bones, and this callus seems to become bony before any solid union is effected between the edges of the bone itself.

After some remarks of rather a conjectural character upon the periosteum, Mr. Meade goes on to observe—

“ I have stated that the process of union of fractures of the flat part of the scapula varies in certain cases. I will now endeavour to point out these particular instances. In many experiments which I have performed, I have found that union is accomplished without the formation of any provisional callus. In the greater number of these cases the periosteum had remained entire, as in the fourth experiment which I have related; and I am inclined to suppose, that this circumstance will partly account for the absence of callus. In the first place, the fractured edges being prevented by the entire state of the membrane from irritating the muscles and surrounding textures, the inflammation which gives rise to the effusion of lymph and consolidation of these textures, so as to form the external capsule, is not produced: and the preliminary steps in the formation of the provisional callus are wanting. In the second place, however, why is it that little or no exudation takes place from the surface of the bone beneath the periosteum, so as to form a ridge under this membrane? The only explanation which I can find for this is, that the periosteum is very little separated from the surface of the bone in these cases, and lymph seems only to be effused where the connexion between these parts is destroyed. I find it mentioned by writers, that cylindrical bones are sometimes broken without the periosteum giving way. Mr. Gulliver refers to a specimen preserved in the museum of the King's College, London, where both bones of the fore-arm of a child were fractured, without the periosteum being injured. He does not say, however, whether any callus was here formed. I can scarcely conceive it possible that the cylindrical bone of an adult can be broken without the periosteum giving way at the same time, at any rate, on one side. In a few cases, which I have noticed, where no provisional callus had been formed, the periosteum had apparently given way, and here the only reason that can be assigned for the absence of callus is, that the broken fragments had remained accurately in contact, and the direction of the fracture had been such, that complete immobility had been preserved; under which circumstances it has been premised, that

union might take place, simply by the deposition of ossific matter between the extremities of the fragments. It has been said, that where union is accomplished without the formation of provisional callus, the process is very slow; but in the eighth experiment which I have related, the upper edges of the fracture which had remained in contact, and which were covered by periosteum, were united by new matter effused between the fractured margins, as early as the thirteenth day; which new matter was of a cartilaginous consistence, and insensibly blended with the broken edges, and would doubtless soon have become osseous." 403.

Mr. Meade concludes with a notice of one or two other facts.

"It has been stated by Macdonald, and repeated by other authors, that the cartilaginous matter forming callus, differs from true cartilage by becoming tinged red, when the animal has been fed on madder. I have distinctly observed that this is incorrect in many cases; the bones of the body generally having been found coloured, as well as the new bony particles deposited in the callus; while the cartilaginous matter surrounding these fragments has been perfectly white. I have been, by this means, enabled to observe, that the new bony particles are deposited irregularly through the provisional callus, and do not first arise from the surface of the old bone.

The lymph effused from the edges of the fractured bones themselves, and which fills up the interval between them, differs from that forming the provisional callus, in having a peculiar red granulated appearance. Mr. Howship, and latterly Mr. B. Cooper, consider that the coagulated blood plugging up the ends of the bones, actually becomes organized; but I could not find any other point of resemblance between this new effused matter and coagulated blood, besides the reddish colour." 404.

So that the process of union in fractures of the scapula differs little from that of the common cylindrical bones.

IX. CASE OF ANEURYSM OF THE ARTERIA INNOMINATA, IN WHICH THE CAROTID AND SUBCLAVIAN ARTERIES WERE TIED. By W. WICKHAM, Esq. Surgeon to the Winchester Hospital.

Richard Colt, aged 55, admitted into the Winchester County Hospital, Sept. 17, 1839. He had been a sailor, and resided nine years in a tropical climate. Six months ago he had observed a small swelling, about the size of a hazel nut, situated just above the right clavicle, at about its middle; it was unaccompanied by any pulsation or pain, and it disappeared in about eight days; from which time, until about four weeks previous to the date of his entry at the hospital, he had no return of swelling, when suddenly his attention was attracted to another tumor about the same size, which presented itself just above the sternal end of the clavicle: this soon became painful, and the pain was much increased when he was in the recumbent posture. The pulsation too was now soon evident, and as the swelling enlarged it occasioned some difficulty in breathing; at the end of the four weeks he showed the swelling to Mr. Adams, a surgeon at Lymington, who considered it aneurysm, and advised his coming to the hospital.

On his admission, the swelling had attained to the size of a hen's egg externally; it seemed that the tumor extended over the carotid artery at its lower part, reaching as high as the transit of the omo-hyoideus muscle: it

inclined somewhat also towards the subclavian artery: it had all the characteristics of aneurysm, and that of the innominata. The health of the man appeared tolerably good, with the exception of some degree of constitutional disturbance, arising from continued pain and difficulty of respiration.

On the 24th of September, the case was submitted to Sir Astley Cooper, who was on that day at Winchester. His opinion confirmed that already entertained, that the disease was innominata, and his sanction was given to the experiment of tying the carotid and subclavian arteries.

Sept. 25th.—A ligature was placed on the carotid artery immediately above the omo-hyoideus muscle, which was somewhat pushed upwards by the tumor. The operation was completed without any difficulty or any unusual circumstance attending it. The arrest of the circulation through the vessel was complete. The immediate effect of the operation in no degree diminished or disturbed the functions of the brain. The aneurysmal sac evidently lessened as soon as the ligature was tied, but the pulsation continued, though certainly with less force. The trachea was almost immediately relieved from pressure by the reduction of the tumor, and thereby the troublesome cough and dyspnoea considerably lessened. The patient throughout the day well, and feeling much benefitted by the cessation of those distressing sensations which the pressure of the aneurysm had previously occasioned.

No unfavourable symptoms followed the operation. The ligature came away on the 14th day, after which time the patient was allowed to walk about, and at the end of three weeks he left the hospital contrary to advice, but under the pretext of having affairs to settle at home, and with the promise of returning at the end of a week or ten days. At this time the tumor appeared of the size to which it was reduced immediately after the operation, and the pulsation as before the carotid was tied.

The patient was now surrendered to the care of Mr. Adams, who watched the case, and urged the performance of the second operation. This, however, the patient refused until the 27th November, two months after the first. At this time his appearance was very wretched, the difficulty of breathing extreme, cough very frequent, and deglutition much impeded. The tumor had increased to more than double its original size, and especially it had extended outwardly so as to overhang nearly half the clavicle.

A consultation was held on the 2nd December, and, on the 3d, the operation was performed.

The patient had passed a night of great suffering, and more than ever from the difficulty of breathing, which continued to the time of the operation. When brought into the operating theatre, he was quite livid from the arrest of the circulation through the lungs, and his pulse excessively weak. He appeared to be almost at his last gasp from suffocation; and great fears were entertained lest he should expire under the operation. It was however agreed, that this was the only chance of relief, and inasmuch as the tumor had so decidedly lessened after the former operation, it was hoped that a similar effect might be produced by tying the subclavian. The operation was therefore undertaken without further delay in the following manner:—

The patient was laid on a table with his head and shoulders raised towards the light, so that it might fall from the skylight into the hollow of the incision. The skin being drawn down, an incision was made through the integuments upon the clavicle; it commenced near the acromion, and extended

along the clavicle to the tumour, which now occupied about one third of the clavicular region : the incision terminated by being carried a little upwards by the side of the external jugular vein, which was distinctly visible, and distended in consequence of the difficult respiration. It divided the skin and platysma myoides ; the cervical fascia, now becoming exposed, by careful touches of the scalpel, and the aid of a director, was easily divided. The loose cellular tissue having been next cleared away, the situation of the artery was readily detected in its passage over the first rib ; but it lay so far beneath the tumour and clavicle, that some difficulty was experienced in this stage of the operation. At first one of the cervical nerves, which received a pulsation from its contact with the artery, was mistaken for the subclavian, and a ligature passed under it : this mistake being at once discovered, it was not tied, but drawn away by this means from the artery, so as to bring it into view. A ligature was then passed around the vessel, by means of an aneurysmal needle, made by Weiss, having an eye at the end of a spring which slips along a canula inserted into a firm handle (this needle being admirably adapted for the purpose). The artery having been firmly tied, the pulsation at the wrist ceased, the wound was dressed, and the patient put to bed. Relief from the dyspnoea was immediate, so much so that the man was able to walk with ease to his ward, and from that time he continued free from any inconvenient pressure on the trachea until he died, the direction of the growth of the tumour having been subsequently diverted *outwards* towards the right shoulder.

On the next day, the patient was in every respect well : the tumour had manifestly decreased, but pulsation in the sac continued, though less in force, as on the former occasion. No pulse to be felt at the wrist. The heat of the arm greater than the opposite. He was treated as under the previous operation. No unusual symptom occurred until Saturday evening, Dec. 7th, when he was suddenly seized with delirium and muttering, a considerable increase of the aneurysmal tumour, and violent pulsation of the heart and *left* carotid : it was so great as to shake the whole frame, and actually raise the head from its pillow. He was immediately bled to twelve ounces and took thirty drops of laudanum. The first part of the night was passed with but little diminution of the symptoms : after which however they gradually diminished, and by the following evening he became quite tranquil. From the time of this attack the tumour never diminished ; on the contrary it gradually, though slowly, increased. His health continued to improve, and with the exception of occasional pain from distention of the swelling and pressure on the nerves over which the tumour was situated, his sufferings were comparatively mild.

On the 23rd of Jan. he became suddenly faint and weak with loss of appetite, which lasted a few days ; and he again recovered sufficient strength to feel anxious to quit the hospital.

On the 25th of Dec. the ligature came away in the dressings, and the wound speedily healed. He now sat up and smoked his pipe, which was his habit, and, although gaining no ground, feeling some confidence as to his ultimate recovery, he persisted in his desire to quit the hospital, which he did on the 5th of February. He returned to Lymington.

On the 15th of February Mr. Adams was called to him on account of profuse bleeding, which occurred in the evening : this was arrested by
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plugging and clots, but on the following morning, Feb. 16th, he bled again, and died without an effort.

Thus a period of about four months and a fortnight passed between the first operation and the death of the patient.

Post mortem appearances on inspection.—The heart was large and loaded with fat.

The *pulmonary artery*, nearly twice the natural size.

The *aorta* extremely dilated from its origin in the left ventricle through the whole course of thorax; specks of osseous matter appeared in its coats.

The *superior cava* was also greatly enlarged.

The aneurysm had emanated from the *arteria innominata*, below its division into subclavian and carotid arteries. Nearly half of the innominata was occupied by the origin of the aneurysm. A ligature upon the remaining part of the innominata would not have left space between it and the arch of the aorta for the formation of a clot, or adhesive matter.

The *sternum* was slightly absorbed at its upper part.

The *clavicle* had undergone progressive absorption from the pressure of the aneurysm upon its inner and lower surfaces, and its articulation with the sternum had been destroyed, so that the clavicle became lifted upwards.

The *right* subclavian artery was obliterated from the clavicle to the first rib.

The *right carotid artery* was obliterated behind the tumour from just above the upper edge of the omo-hyoideus.

The *aneurysmal sac* reached from the *arteria innominata* to the upper part of the thyroid cartilage.

The sac had burst upon its left side although it projected most upon the right side.

Another case is thus added to those in which the subclavian and carotid arteries have been tied unsuccessfully for aneurysm nearer the heart. Nor can the result surprise us. When we consider on the one hand the very questionable probability of success from tying vessels beyond an aneurysmal tumour in an artery so near the heart as the innominata—and on the other hand, the likelihood that the aorta, if not the heart itself, is in an unsound state, we shall be prepared for failure, astonished at good fortune. Indeed it must form a subject of deliberation whether operations of this nature can be recommended. Every unsuccessful one materially impairs the arguments for its repetition.

In the case before us Mr. Wickham appears to have exhibited the skill and boldness for which he is deservedly celebrated.

X. CASE OF TUMOUR IN THE PELVIS, IMPEDING PARTURITION. By J. C. W. LEVER, Esq., Assistant-Accoucher to Guy's Hospital Lying-in Charity.

On January 19th, 1840, at 7 A.M. Mr. N. was called to Mrs. Colston, aged 28, in labour with her fifth child. Her previous labours had been remarkably quick, indeed so rapid, that upon one or two occasions, the child was born before the arrival of the surgeon. When Mr. N. saw her, he found that labour-pains had commenced twelve hours previously, and on examination, he detected a tumour projecting into the vagina, impressing him with

the idea that the rectum was full of feces. The os uteri was felt above the tumour nearly dilated, and the head of the child presenting, her pains occurred at regular intervals, and were tolerably strong; he ordered her to take a dose of castor oil immediately. At 1, P.M., the oil had operated well, and on making examination, the tumour was found to be pushed lower down: an enema was now administered, which acted very speedily: introducing his finger into the rectum, Mr. N. found the tumor was situated between the rectum and vagina, and on further examination, it was felt to contain fluid, and to the left side, there seemed to be a firm body, impressing the examiner with the idea that it resembled in feel, the upper extremity of a foetus.

"The pains," continues Mr. Lever, "were now very strong, and the patient had but slight intervals of ease. Mr. N. having requested my opinion of the case, I attended, and found the tumour as large as a foetal head, occupying so much of the pelvic cavity, that the finger could with difficulty be passed between the tumour and the symphysis pubis, and on examining her rectum, the coccyx could not be passed; her pains were very violent and frequent. I advised the evacuation of the fluid contents of the tumour, thinking that if this were done, sufficient room would be obtained for the birth of the child, without diminishing the head. Having guarded a common lancet, I made an opening into the tumour, through the vagina, when upwards of a pint of an oily fluid immediately escaped, the sides of the tumour collapsed, the pains continued, the head rapidly advanced, and in two hours from the time of operation, she was delivered of a living male child, which was soon followed by the secundines. On placing the hand on the abdomen, after delivery, the uterus was found perfectly contracted, while to the left side the firm tumour which formed part of the contents of the sac could be felt. The evacuated fluid, when cold, greatly resembled dripping." 416.

On the 20th May, after her confinement, she complained of forcing pains, and Mr. N. again found the tumour between the vagina and the rectum, and extremely tense.

According to Dr. G. O. Rees' analysis, the substance contained much cholesterine. In a note, Dr. Merriman approves of the puncture of the tumour through the vagina. In two cases it had been opened through the rectum with a less successful result, and Dr. M. also approves of the lancet, rather than the trocar.

If we are not misinformed, this case was related to the London Medical Society by Mr. Newth (the "Mr. N." of Mr. Lever's report) and published in the *Lancet* at the time. We cannot help thinking that a more explicit reference to Mr. Newth would have been well.

DU TRAITEMENT MORAL DE LA FOLIE. Par M. Leuret. .
8vo. pp. 462. 1840.

THE scope of the present work, from the pen of one of the physicians of the Bicetre Hospice at Paris, is to endeavour to correct many of what he deems to be prevailing errors in the management of certain forms of mental alienation. Its sum and substance are comprised in the following three propo-

sitions, which are laid down in one of the opening pages, and which are subsequently illustrated at great length by reference to the recorded opinions of other authors, and to the extensive experience of M. *Leuret* himself.

1. If it be true that insanity always depends upon, or is connected with, some lesion of the encephalon, it must surely be admitted that as yet we are completely ignorant either of the nature, or of the exact seat, of the lesion.

2. The moral treatment of insanity, as recommended and practised by the best writers on the subject, has been viewed by them only as an auxiliary or adjunct to the more important remedial means, the physical treatment.

3. In my opinion, on the contrary, insanity, when it is not associated with corporeal disease or suffering, is most efficaciously relieved, or even cured, by appropriate moral treatment; whereas physical means, under such circumstances, are of little or of no avail.

M. *Leuret* proceeds to adduce numerous arguments and illustrations in proof of these three positions; premising, however, this important caution to his readers, that these positions are meant to apply only to insanity, or disturbance of the intellectual and moral faculties, when it is uncomplicated, or, in other words, unattended with symptoms of corporeal disease. "For," says he, "if there be present at the same time paralysis, apathy, agitation, loquacity, fever, &c. we have reason to infer that there is a physical lesion somewhere, and we must therefore have recourse to physical means to relieve it; but in simple derangements of the reason or passions, on the contrary, in cases where the insanity exists alone and without complication, it is moral treatment that is most required."

Let our readers therefore bear in mind this precautionary remark, while we submit to their attention the prominent contents of our author's work.

To prove his *first position*—that, if insanity depends upon any organic lesion of the encephalon, we are as yet completely ignorant as to wherein this lesion consists—he takes a review of the numerous morbid changes which have been described by various writers on the subject, and shews how utterly discordant are their opinions and assertions upon the subject in question.

For example, he shews from the writings of *Greding*, *Huslam*, and *Bertolini*, that there is no uniform change in the thickness of the cranial bones as has been alleged by some authors;—from those of the writers now named, as well as of *Bayle* and *Calneil*, compared with the published researches of MM. *Louis* and *Chomel*, that, although lesions of the meninges of the brain are frequently found on the dissection of insane patients, these very lesions are not only seldom met with in *uncomplicated* and *monomaniacal* insanity, but are also frequently discovered in the bodies of persons who have never, at any period of life, exhibited any traces of mental derangement;—that sanguineous injection or hyperæmia of the cerebral substance cannot be regarded as a characteristic morbid lesion accompanying insanity; since, on the one hand, it is not uniformly present, and, on the other hand, it is very frequently observed after various chronic diseases of the body*—that hypertrophy and atrophy of the brain are only occasional,

* M. *Leuret* is far from denying that hyperæmia of the brain exerts a real

the former more rarely than the latter, necroscopic phenomena—that œdema of the brain is a still more unfrequent phenomenon—that there is the greatest discordancy among authors as to the frequency of any increase or of decrease of density in the substance of the brain in cases of insanity, uncomplicated with manifest corporeal disease*—and, indeed, that the same assertion holds good of every other morbid alteration which has been described by authors.

He next alludes to the important fact that every writer on the subject, without exception, admits that in some cases of insanity no traces whatever of any alteration in the brain or its appendages are discoverable on the minutest examination.

Thus M. Calmeil, after mentioning that, in eight out of seventy-five cases of insanity, the encephalon was found on dissection to be altogether healthy, adds these words: “the anomalies of structure observed in the bodies of the insane are not in themselves sufficient to account for the state of alienation, because we sometimes meet with the same appearances in those who have never shewn any symptom of it.”

M. Esquirol, too, most distinctly admits that dissection has quite failed in making known to him what is the physical cause of insanity; and M. Lelut, who of late years has prosecuted his pathological researches with the greatest assiduity, expresses the same opinion. M. Heinroth, the German translator of Esquirol's works, even maintains that the brain is a stranger to the production of insanity!

But M. Heinroth is one of those spiritualist gentlemen who subtilise many ordinary physical phenomena, until we can scarcely recognise their existence: his opinion, therefore, is not likely to have much weight with the English reader.

M. Leuret makes a few remarks on the attempts made by Gall, and other phrenologists, to localise the different forms of insanity in different parts of the encephalon; but, in spite of the arguments and reasonings of MM. Ferrus and Parchappe among his own countrymen, and of Drs. Ellis and Elliotson in this country, he regards them as quite unsatisfactory, either for sound theory or judicious practice.

He sums up his remarks on the pathology of insanity with the following observations:—1, that physicians have, without any spirit of discrimination, accumulated or huddled together all the morbid changes which they have found, or believed to have found, in the brains of persons who have died insane; 2, that they have been in the habit of much too hastily attributing the disturbance of the intellectual and moral faculties to these real or sup-

influence in producing many of the pathological phenomena which are observed in insane patients. All that he contends for is, that it is not to this morbid condition that the mental or *psychical* symptoms can be justly attributable; and, consequently, that it is by no means a uniform necroscopic appearance in cases of simple uncomplicated insanity when the physical or corporeal health remains unaffected.

* Thus M. Ferrus has asserted that, in melancholy with a tendency to commit suicide, the brain is generally *excessively soft* and exsanguine, while M. Cazauvieilh, in his recent work *Du Suicide*, &c. 1838 states, that in seventeen dissections of suicides the substance of the brain was unusually firm.

posed changes of structure; 3, that they have too much neglected to take account of the changes which are compatible with the integrity of the mental faculties; and 4, that, as regards the changes said to be peculiar to the insane, the distinctions between the symptoms which are of a physical and those of a psychical or mental nature, during the life of the patient, has not been duly attended to.

"I do not wish it to be concluded," says he, "from these observations, that in my opinion, the brain does not experience any alteration in the insane, even in cases where the mental alienation appears to be free from any other morbid complication. I admit, in the production of insanity, the influence of certain physical causes; and I also admit that organic lesions of the brain are more frequent in the insane than in any other sort of patients. But then as to the nature of the alteration, which is the immediate cause of insanity, I assert that hitherto no one has been able to point it out. If it really exist, it must be similar to that which gives rise to dreams, which suggests the false convictions in persons of otherwise sound minds, and which excites the instincts and passions. On no occasion does it reveal itself by physical characters, and its nature is completely unknown."

The second chapter of the work is occupied with a summary review of the published opinions of the leading French writers on insanity during the last forty years on the important question, how far moral treatment avails to the mitigation or removal of the mental disorder. *M. Leuret* shews that by all, without exception, it has been regarded only as an auxiliary, or aid to the more important means of physical or corporeal medication.* In his opinion, the rule should be reversed; the moral should take the precedence of the physical treatment, in all cases where the insanity is not associated with obvious disturbance of the bodily health.

* Our author alludes to several recently published English works, which, like those of his own countrymen, are all, he says, too much occupied with instructions as to the mere physical treatment of the insane. He illustrates this by commenting on an instance of theomania, recorded by Sir Alex. Morrison, in his *Cases of Mental Disease 1828*. "The patient, whose health was good, thought that he was frequently conversing with spirits; to prevent him seeing them, he was directed to take pills of calomel and jalap. He then thought that he was God; the pills, and baths also, which had been administered, were discontinued. He became violent; forthwith he was shut up in his cell and cupped. He broke the windows; a dose of ipecacuan was given him. No change in his condition; camphor and hyosciamus were ordered. Such is a specimen of the unmeaning treatment pursued in a great number of lunatic establishments."

M. Leuret, however, acknowledges that one or two of the English writers have counselled more wisely. He alludes to *Mr. Tuke* (a description of the Retreat near York for insane persons, 1815) in the following commendatory terms: "He justly condemns an old practice at Bethlehem of bleeding and purging all the patients at regular periods; and endeavours to point out the inefficacy of physical remedies, while he strongly urges the importance of appropriate moral treatment. He wishes that the insane person be led to exercise himself a controul upon his own actions, and that his medical attendant endeavour to inspire him with various emotions, and occupy his mind with various ideas. In all this, I entirely agree with him; the only thing that I find fault with him is, that he has not distinguished, in reference to the treatment, the cases of simple uncomplicated insanity from those in which there is co-existent some lesion of the movements and of the sensibility."

This is the great aim and object of *M. Leuret's* work ; and certain it is that he has worked out his problem with very considerable ingenuity and success.

In a vast number of cases of monomaniacal or partial insanity, there is unquestionably not a little share of wilful obstinacy and petulance of temper blended with the existing mental delusion ; indeed, the patient himself will not unfrequently admit the folly of his vagaries when under the influence of strong hope or fear. This admission indeed may be for the moment only, when these feelings are worked upon ; and, whenever their influence ceases, all the former extravagances will re-possess the mind. But if, as *M. Leuret* remarks, we once succeed in frequently renewing the effects of the emotions thus excited, so that the patient himself begins to associate the idea of the indulgence of a favour, or of the infliction of a penalty, with certain phantasies of his mind, we shall find, in not a few instances, that these phantasies will soon have a fainter and fainter hold upon the attention, and will ultimately entirely vanish. It is by working on the hopes and fears of the patient—provided always the bodily health be perfectly good at the time—and by blending kindness with an authoritative firmness in all his demeanour, that the physician may best hope to acquire that influence over his patient's mind, which so often conduces to the restoration of its perfect sanity. Our author very justly remarks, that there are many points of analogy between the character of a monomaniac and of a froward and spoiled child. No one would think of physicking the latter for petulance of temper ; and it is no less absurd to endeavour to dispel the illusions of the former with purges and mercurials.

The means, to which *M. Leuret* chiefly trusts for acting on the fears of the insane, is the use of the cold douche bath. The force and size of the stream of water, the height from which it comes, the length of time it is to be continued, &c. must be varied according to circumstances. Most patients complain most bitterly of its use, and will make almost any concessions to escape its repetition ; but some remain quite indifferent about it. The aim of the physician should be so to manage its administration that the patient, while under the douche, will make an earnest promise to perform something that is required, or abstain from something that is forbidden.

"When I have once gained a concession," says *M. Leuret*, "I am not satisfied ; I require new ones each day ; the more that are granted, the more I require ; and, if I see the hopes of a cure, I stop in my demands, only when this has been effected."

It is quite unnecessary to allude to the reproaches which have been thrown upon our author by many of his confreres for his alleged want of proper feeling towards his patients, and his endeavours to work so much upon their fears. If his cruelty does not go beyond giving them cold douche baths against their will, and to their very obvious annoyance, the most sentimental moralist will doubtless excuse him.

While insisting much upon the value of this mode of overawing many insane patients, *M. Leuret* is far from trusting to it alone in the management of various forms of mental alienation. He recommends that every means should be employed to divert and amuse their minds, and to withdraw their thoughts from their delusions by keeping both their mental and their bodily powers engaged. The value of out-door exercise, of walking, riding, or driving, of working in the garden, of engaging in various sports, and also

of in-door amusements, such as music, billiards, the acting of plays, &c. is much dwelt upon. It is unnecessary to say more; as every one is now aware of the hurtful effects of long seclusion and silence even to people of sound minds:—what then must be their influence on the insane? M. *Leuret* recommends that the invalids should dine together. It is always well to keep up the rules strict of etiquette during every repast:—the attention is thus to a certain degree maintained, and, by the performance of the little courtesies to each other, the patients are accustomed to exercise a certain degree of controul over their own feelings. In large establishments, it is often useful, as well as very convenient, to divide the patients into several *messes*—giving to one the superintendence and preparation of the food for his division, after the manner practised on ship-board.

Having thus briefly stated the leading contents of M. *Leuret's* work, we shall extract a few of the cases, abridged, which he records in illustration of the sort of moral treatment recommended and adopted by him in public and in private practice.

CASE.—Imprisonment for a political offence—production of the thought, accompanied with an hallucination of hearing (?) ; refusal to speak or to take food—cure by moral treatment.

A man, 30 years of age, was admitted into the Bicetre in May 1838. When M. *Leuret* visited the hospital on the following morning, he found his patient pale, lying on his back, and most doggedly taciturn; he would not answer a single question, and he had refused to taste either food or drink, not only since his admission, but for upwards of a week before. His pulse was natural, and nothing indicated any corporeal disorder.

As hitherto he had refused to answer any of the attendants, M. *Leuret* did not address any question to him; but, seeming to be quite indifferent whether he spoke or not, said in an authoritative tone—"This man must be made to drink:" and, immediately closing the patient's nostrils with one hand, he forced into his mouth a cupful of gruel with the other. In spite of some resistance, the gruel went down; and M. *Leuret* enquired of the attendants if the *douche* was ready, as it must be used at once, if he spat out any thing that was given him. Already M. *Leuret* had acquired some influence over him, although he had not addressed a word to him.

In the course of the day, he passed urine in bed; but, without reproaching him for this, he was merely ordered to swallow a cupful of broth;—he was made to do so by using the same means as before. At the same time he was ordered to rise from bed; as he did not move, the attendants at once drew him out, and put on his clothes: when dressed, he consented to stand up. He was led out into the garden, where a number of the patients, ranged in a chain, were engaged in passing stones, the one to the other. Poor *Urbain*, weak as he was, was placed in the middle of the chain, and when his neighbour held out a stone to him to be passed to the next on the other hand, he looked at it, smiled, and after a moment of hesitation, took it and passed it along. This was repeated several times, and before long he engaged in the work as cleverly as any of the others. While this was going on, a tureenful of soup was brought, and a spoon was given to each man. *Urbain* was invited by one of his neighbours to come and eat; he allowed himself to be led to the table, took a spoon, and began to eat as

well as the rest. In the evening he refused to eat, and, instead of drinking what was offered to him, he took hold of the spittoon and swallowed all its contents.

Next day, he seemed somewhat better; but, strange to say, he was ordered by the visiting physician in attendance on this day to be cupped on the neck, have an aperient enema, and a tepid bath! and many kind exhortations were addressed to him. M. Leuret again took charge of him in a few days, and, instead of doctoring him with physic, bade him get out of bed, and carry some pitchers of water for the use of the ward: when he had done this work, a couple of boiled eggs and some bread were put into his pocket, and a cupful of milk was put at the side of his bed. When left alone he ate the eggs, and drank the milk.

Next day, he refused either to speak, or to take his food: the douche was therefore resorted to; he bore it at first without winking; but soon began to be distressed with it, and exclaimed for the first time, *Mein Gott! mein Gott!*

Without taking any notice of what he said, he was merely asked whether he would take food; he consented and swallowed what was put before him. For the next nine days, it required compulsion to make him take food. What was curious, and shewed how much real obstinacy is present in many such cases, was that he made no resistance to the introduction of an œsophageal tube into the stomach, but that, if a spoonful of food was put into his mouth, he at once spat it out.

On the ninth day, the obstinacy of Urbain being overcome, he consented both to speak and to eat his food. When asked what had induced him to refuse doing so before, he made no reply—probably from being aware of having no good reason to allege.

By degrees he became more and more submissive; and, in order to prevent him brooding over his own thoughts, he was kept almost constantly occupied in some way or another.

Two months after his admission into the hospice, he was permitted to leave.

The cause of the malady in this case was purely moral, having been induced by imprisonment in Germany for some political offence, and increased by subsequent distress and privations, when he made his escape into France. Such a case is surely not to be treated by cupping, blistering, and physic-taking, as is too often tried. It is by acting on the mind with firmness, and yet with kindness, that we can hope to overcome the gloom and obstinacy of such a patient.

M. Leuret mentions the case of a monomaniac in the Bicetre, who, in consequence of the utter inefficacy of all the means that had been tried, had been placed in the section of the incurables, and who had formed the resolution to perish from hunger. For three entire days he did not swallow a mouthful of anything. He was ordered to have the douche. When this was over, he spoke to M. Leuret, and asked him why he was treated so, adding that it was better to die of want, than live miserably in a hospital. "It rests with yourself not to live in a hospital; cease to act unreasonably; if you give over your sullenness, and begin to work and eat, you shall have your freedom."

"My freedom! when will you give me it?"

"In a month, if you choose."—"In a month? then I will eat."

From this time his obstinacy ceased; and at the end of the month, the promise, which had been given in the bath-house, was faithfully fulfilled.

M. Leuret alludes to another case, that of a young lady who had formed a similar resolution to kill herself by fasting. Food however was introduced into the stomach by means of the œsophageal tube: but, if any was put into her mouth, she at once rejected it. No decided progress was made in overcoming her insane intention, until a little *ruse* was practised. Her family were requested to go to M. Esquirol's establishment, where she had been living, and, without making any allusion to either her past or present condition, to invite her to accompany them to Versailles. She went with them; and, after walking about in the gardens for some time, the whole party repaired to a restaurateur's; she sat down like the rest; hesitated for a moment; but, no notice being taken of her, she began to eat: from that time she never refused to take her food, all her gloomy ideas vanished, and she returned home, enjoying her perfect reason.

"Here," says M. Leuret, "the practice followed was quite independent of pathological anatomy; and indeed it is the only rational one in all cases of simple, uncomplicated insanity."

CASE.—Disappointed love—hallucinations of sight and hearing; ambitious ideas—temporising useless; moral treatment successful—duration of the disease, nearly four months.

A man, 31 years of age, was admitted into the Bicetre on the 17th Sept. 1839. His tale was, that for two months he had been desperately enamoured with a fair seamstress, who at first treated him scornfully, but afterwards became as loving as possible. The poor fellow's head was upset by his good luck; and, from one absurdity to another, he at length worked himself into the assurance that his "ladye love" was not one of earthly mould, but a heavenly messenger, who visited him in his dreams. However, as she would never consent to marry him, he fell into a state of the gloomiest melancholy, and committed the greatest absurdities, until at length he was brought to the Bicetre. His bodily health was quite good, and being aware where he was, he most urgently implored to be discharged, as, he said, he had to attend to his business. At length, he became reconciled, and was very calm; he eat and slept well; but he would not work, alleging at one time that a prophet never works, and at another that he was soon to be liberated, and therefore that there was no occasion to begin any work. He was amused with the tales and conduct of the other inmates, and seemed to be quite aware of their absurdities; but as for himself, "he knows what he knows; fools act extravagantly, but no one can say that of him. He has never spoken a word that is not altogether true, and, although he is not believed, yet it will be found out sooner or later that he has been in the right; he will never draw back from what he has said, nor will he consent to work like a drudge for any one."

For two months no change took place in his delusions; but, as he still refused to work, M. Leuret thought that it was high time that a decided attempt should be made to compel him to do so. He was therefore ordered to have the douche. From this time, he offered to work at any carpentry, but positively refused to do anything else.

"I have no carpentry work to give you; you must labour in the garden, like your companions. You shall have a spade, and let me see you set about using it immediately."

The fear of another *douche* made him submit. While engaged in working, M. Leuret spoke to him about his sweetheart, her visits to him as an angel at night, &c.; and he now confessed that it was all a delusion, that he no longer believed in what he formerly said, and that he was determined no more to think about what he now knew to be mere folly. He kept his word, and was in consequence dismissed in about a month afterwards.

"Some may object," says M. Leuret, "to my conclusions, and assert that a promise extorted from an insane person by fear is not likely to have any influence over him, when he is left to himself. But this is really not the case, provided the fulfilment of the promise has been kept up for a considerable time, before the restraint is removed. The renunciation of the foolish ideas is at first, I admit, merely on the lips; but when the person finds that along with such a renunciation he must act consistently, the mind is gradually withdrawn from its errors, and, if kept occupied, it will often revert into the channel of sounder thought. I have known many persons, who, long after their cure, when they called to mind their hallucinations, rejected them with all their energy, from the circumstance of associating with their existence the treatment which had been followed. The conclusion from what we have now stated is, that in numerous cases we may succeed, by means of simple moral treatment, in dispelling the illusions of the insane."

CASE.—Sedentary and Inactive Life; heating diet—fear of damnation; perverted sensations—Cure effected by the use of cold baths, exercise, &c.—Duration of the illness, eight months.

A young married lady, who had been the ornament of the society in the capital, retired with her husband into a sequestered part of the country, where, there being little to occupy her mind or feelings, she passed much of her time in bed and inactivity. After a nervous attack, her mind seemed to be much shaken; she was haunted with the fears of religion and believed that she was eternally lost. She was put on a mild unirritating diet and gradually recovered. Soon afterwards, however, she was seized with violent palpitations of the heart, for which leeches were applied on the precordial region. She became more and more restless, and all her former fears returned with double force. Although she had received absolution from her confessor, she did not believe that her sins had been forgiven. Some days she sat in a corner of her room and would not speak to any one, and at other times she ran about the fields screaming in the wildest manner. She was taken to Paris and boarded in a convent of the *religieuses hospitalieres*. Here every means of spiritual consolation—as private and public prayers, pious songs, visits to various chapels, counting of rosaries, kissing of holy relics, absolutions (what mummary!), &c. were lavished upon her; but without avail. She was, therefore, transferred to a *maison de santé*, where she was visited by M. Leuret. After relating her complaints she told him that no one could cure her, for that she was inevitably doomed to hell, and that all that she wished was to be left alone in a silent apartment, where others might not suffer from witnessing her agonies. Her bodily health seemed to be quite good; the catamenia were regular: she was forty-two years of age, and had been six months ill. M. Leuret assured her that she

would get better, and, instead of leaving her in a room by herself, gave orders that she should be placed in a part of the building where there were upwards of a dozen persons. He told her that he would change her quarters in the course of a few days, if he deemed it proper, and at the same time he impressed upon her that, if she uttered any screams during the night, it would be necessary for her health that she should be taken to the bath: "I count much," said he, "on the cold bath long continued to calm your nervous excitement." At night she began to scream and shout aloud, blaming M. Leuret at the same time that he had left her in a room where her cries disturbed other patients. She was, therefore, at once taken to the cold bath, in which she was kept much against her will for some time: she gradually became quiet, was taken back to bed, and then fell asleep. Next night she was again noisy, and the cold bath was repeated with the same effects as before. On the following noon, a third bath was given in consequence of her noisy restlessness.—"But, Sir, to-night again; I have already been in the bath for four hours." "Well, madam, other four hours are necessary; it is by the violence of the disorder that the frequency and the length of the baths are determined." From this time Mad. E. understood that the only way to escape the baths was to give over screaming; and the effects were soon apparent, for in the course of a few days she had ceased entirely from making any noise. Although now much less gloomy and unhappy than she had hitherto been, the cause of her crying still continued; she said "Every morning, soon after waking, I feel a most oppressive weight on all my limbs, while this part (pointing to her heart) feels quite empty: all my distress is owing to ten devils who come to lay hold of me. My moral heart is gone; I love nothing now; for the condemned do not know what it is to love. The chain which knit my heart to heaven is broken; my prayers cannot reach God; I am lost, I am lost." "Have you ever seen or heard any thing *en dehors de* your ordinary sensations?"—"Yes, once I heard a voice which said—thou art lost." "When did you hear this voice?"—"A long time ago, at the beginning of my illness." "Whence did it come?"—"From the inside of my body." "How were you certain that it was really a voice, and not merely an idea?"—"Eh, Mon Dieu, by the noise?" "Was it a noise produced at the same time as the idea, or was it a sound of the voice?"—"A sound of the voice: I do not know how the nurse, who was with me, did not hear it." "These devils whom you hear, have you never seen them?"—"No."

Madame E. continued still gloomy and seemingly most wretched. The only plan to dispossess her mind of her delusions was to keep her occupied, and an appeal was, therefore, made to her kind feelings to engage her in preparing some lint for a poor man who had met with an accident. Her fingers at first would scarcely move; but, when she saw others doing it, she at once set to and worked most diligently—for she was naturally of a benevolent and charitable disposition. The first step was thus made; she let us see that she could work, and she was convinced of it herself; the object now was to find a motive to induce her to do so every day. The fear of the cold bath furnished this motive; for M. Leuret, finding her one day gloomy and silent, began to scold the nurse for not giving her the cold bath every day, adding that the use of it was absolutely necessary for every one that did not work at something. This had completely the desired effect; she

worked a great deal with her needle ; her mind was thus diverted ; gradually she entered into conversation, resumed her music, and actually began to laugh at her past delusions. Within two months Madame E. was able to return home ; she travelled about for some time ; and ever since, a period of seven years, she has had no return of her mental malady.

In commenting on the preceding case, M. Leuret impresses on his readers the importance of a physician accommodating his manners and mode of treatment to the peculiarities of each case. "He must strive to make himself master of all his patients ; but this he cannot do unless he varies and multiplies his means of action in innumerable ways. According as need be, he should employ either a firm and even a rude or a conciliating manner, either condescendence or despotism ; he must flatter in one instance, and check in another, certain passions ; now lay a little stratagem and now act with the utmost candour and seeming confidence ; in one word, seek in the minds and tempers of those he wishes to cure for some spring or lever, which, once set in motion, may restore to the mental faculties the energy or the rectitude which they have lost."

CASE.—Vanity and Love—demand of a princess in marriage—Mental Alienation—carried almost to Mania—Moral Treatment ; Cure—duration of the illness, eight months.

A man, 37 years of age, and who, although the son of an old general of Napoleon, had been for a length of time in a draper's shop, where he had uniformly shewn great attention to business, became all at once smitten with desperate love for one of the daughters of Louis Phillippe. He followed her carriage wherever she went, tried to attract her notice by dressing in the most fashionable style, and even sent presents of gloves, &c. to her. He became at length so extravagant as to stand at one of the corners of the palace and kept moving his hand from his lips to and fro, as if wafting kisses to the fair princess.

When taken to the Bicetre, he was guarded in his answers : but, whenever any allusion was made to the royal family, he indicated by his gestures that his ideas were constantly recurring to that subject.

M. Leuret did not take any notice of him for some time, except every now and then expressing his surprise that he should have given up the respectable occupation of a merchant to become a dependent upon charity. But as he continued in the same state for several weeks after his admission, he was ordered to have the cold bath, and also to work every day in the garden. He refused ; a douche was ordered ; and immediately afterwards M. Leuret remonstrated with him on the absurdity of his conduct.

This time he began to listen, and requested liberty to write the history of his case. In the report, after alluding to his devoted attachment to the royal family, and his long and ineffectual attempts to obtain a situation in the palace, he expressed his regret that he had ever written to the princess, or annoyed her in any way ; attributed his delusions and the circumstance of his being confined in the Bicetre to anxiety of mind, and exposure to the hot sun on one day that he walked to *Eu*, to solicit an interview with Baron Athalin ; and requested to be permitted to return to his commercial speculations.

M. Leuret was satisfied that a very considerable amendment had already

taken place, but insisted that he should remain some time longer, and his attention be kept occupied with various employments. At length seven weeks after his admission, he was discharged as cured. M. Leuret saw him five months afterwards, and could observe no traces of insanity in his conversation or in his conduct.

CASE.—Habits of Intoxication : ambitious ideas ; project to reform the society of the world—moral treatment ; cure—duration of the illness, several months.

A man, 37 years of age, lost his situation as clerk in a public office in the country, in consequence of frequent inebriety, although he always professed the most rigid religious principles.

He came to Paris, and became a joint editor of some publication : his irregular habits still continuing, he again became embarrassed, and partially lost his employment a second time. All the while, however, he continued to be most strict in his religious observances, and in his sober moments condemned his conduct as most improper. He became more and more inconsistent in his actions, and at length discovered that he was a man of extraordinary genius who was destined to revolutionise the world. He was taken to the Bicetre, where he was kept, as a matter of course, quiet, sober, and away from his nonsensical companions. As no change, however, took place in his extravagant notions, he was ordered to have the douche. While in the bath, M. Leuret related to the assistants how inconsistent he was ; for, while he professed to be very religious, he was a drunkard, a liar, and a conceited puppy. The effect of the douche was instantaneous ; he immediately renounced all his ideas of regenerating the world. To try how far his promises were sincere, M. Leuret asked him whether a second douche might not be of use in confirming his good resolutions ; but, as he gave the most positive assurances that he would never relapse into his former errors, and combated these errors with the most rational arguments, the bath was not repeated. He kept his word ; remained for a month in the hospital, and was then discharged.

M. Leuret saw him several times afterwards ; and, although his head was certainly not very strong, he did not exhibit any symptoms of mental derangement.

We might have selected other cases, related by M. Leuret, in which the insanity had been of longer duration, and was more confirmed than in any that we have given. But these will suffice to illustrate his method of treating some of its numerous forms, and to show how much may be done by the firm adoption of a judicious moral regimen in cases, where the mental disturbance is not accompanied with any bodily disorder.

A PRACTICAL TREATISE ON THE VENEREAL DISEASE. FOUNDED ON SIX LECTURES ON THAT SUBJECT, DELIVERED IN THE SESSION OF 1838-39, AT THE ALDERSGATE SCHOOL OF MEDICINE. WITH PLATES. By F. C. Skey, F.R.S. &c. 12mo. pp. 195. Three Plates. London, 1841.

Mr. SKEY appears to be a staunch advocate for the self-generation of venereal diseases. He says,—

“The term self-generated (I will not say spontaneous, for that is still more objectionable) expresses something short of the idea I wish to convey. I mean that, in a certain condition of constitution, the elements of a poison lie dormant, which may be developed by the action of a simple irritant, and that that irritant may exist in the form of any apparently simple, but unhealthy exciting cause in the female, such as leucorrhœa, menstrual fluid, or indeed any impure secretion of a puriform character; it may also be developed by mechanical irritation.” 4.

Certainly Mr. Skey deserves a testimonial “by general subscription of the ladies;” for his doctrine, carried out, would be to them charity, covering a multitude of sins.

“If we adopt the practice of inquiry into all the cases which come under our eye, occurring in persons in a respectable station of life, and of course worthy of credit, it is remarkable how frequently patients themselves express their astonishment at becoming the subjects of disease. And well may they express astonishment, and marvel at its existence in their own persons, for there is often, I am persuaded, no other ground for the supposition of disease in the female, who is supposed to have produced it, than is sanctioned by prejudice, and by a too implicit confidence in the doctrines of our progenitors.” 5.

It appears to us that Mr. Skey carries his notion of the self-generating properties of venereal diseases à l'outrance. Did they exist to the extent he argues for, we really conceive that not a married couple in Great Britain would be safe. Yet, amongst those married persons, it does so happen, that venereal disease seldom occurs without there being a pretty good reason for it.

Mr. Skey professes that he is “a thorough believer in the plurality of poisons.” It is difficult to understand the construction of the following passage, but the author's meaning is obvious.

“I can distinguish, to my entire satisfaction, at least three distinct forms of sore, succeeded by three as distinct results; and I should stare with wonder, and with increased admiration, at the infinite variety of nature's products, were I to discover in any particular case a direct departure from the general laws which appear to me, to govern them. But these laws exist but for a period. The distinction of diseases which appertain to this subject at the present day, in virtue, and that onward march from maturity to decay, from which disease itself is scarcely exempt, will probably be inapplicable at a future one. I do not so much dwell on the liabilities of individuals to a peculiar character of sore, although I consider this subject by no means unimportant, as I attach importance to the doctrine I shall afterwards endeavour to inculcate, that each sore has peculiar results, incidental to neglect of treatment.” 19.

The three kinds of venereal sores admitted by Mr. Skey are—1, The common sore, or *venerola vulgaris* of Mr. Evans; 2, the phagadænic sore;

and, 3, the indurated sore of Mr. Hunter. These and their modifications include all forms of venereal ulcers.

Mr. Skey thus speaks of mercury in the venerola vulgaris—

“As a general rule, there is no necessity for the administration of mercury, in any form or quantity. At the same time you need not forswear its use. In moderate quantities, it is inoffensive and unobjectionable, and may often contribute to the healthy progress of the sore. Five grains of blue pill to an ordinary patient, not the subject of mercurial idiosyncrasy, may accelerate the cure, when given each, or alternate nights; but it should not be used continuously for more than a few days. There is no advantage in what is called ‘touching the gums;’ but generally a great disadvantage both to the sore, and to the health.” 47.

With an extract containing Mr. Skey’s treatment of the sloughing sore—treatment which we confess, we are not ourselves partial to—we conclude. There is much in the work which may admit of question, but as it has been already published in another journal, we cannot devote further space to it in this. We recommend it to our readers.

“The treatment is essentially antiphlogistic, and that, almost without reference to its probable injury to the future health of the individual. The destructive process is so rapid, and the value of the organ so great, that no expense can be deemed exorbitant, with which to purchase even temporary relief. If the disease be external, and accessible to local means, even the antiphlogistic treatment must yield to more direct means of arresting the destructive actions of the sore. This may be effected by the free and unsparing application of the undiluted nitric acid, which must be carefully but extensively applied on every part of the gangrenous surface, till the whole is converted into a soft white crust. This may be followed by a full dose of laudanum, and the crisis of the disease is accomplished. When the sloughing action is confined within the phymosed prepuce, and of course inaccessible to local means, as large a quantity of blood must be taken by venæsection as the patient will bear, accompanied by the exhibition of full doses of mercury both internally and by inunction, with the view to affect the system as early as possible—not with the intention to kill a poison, but to arrest inflammation, of which the gangrene is the immediate product. Frequent ablution, by injection of warm water, or strong decoction of poppy heads, by means of a syringe, should be employed for the purpose of dislodging any disengaged portion of the gangrenous mass that may be separating; and cold water, or a bread-and-water poultice, as may best suit the fancy or the reasoning of practitioner, should be applied around the penis.” 61.

AN INQUIRY INTO THE EFFICACY OF DIGITALIS IN THE TREATMENT OF IDIOPATHIC EPILEPSY. By *Edmond Sharkey*, A.B. M.D. one of the Lecturers on Midwifery in the Hunterian School of Medicine, Charlotte Street. 8vo. pp. 80. Highley, London, January, 1841.

Most practitioners are aware of the obstinate nature and the deplorable consequences of epilepsy. Yet, every now and then we find it disappear, with or without remedies. Where there is no actual deformity of the skull, or imbecility of the mind, we ought to give a fair trial to medicine and diet. Whatever specific we may employ, a regulation of all the great functions is the primary and the principal object. This procedure alone, will sometimes arrest the disease or greatly prolong the intervals between the attacks. The next prominent indication is a drain, by means of a seton, from the neighbourhood of the head. These failing, recourse must be had to nostrums or specifics, as the nitrate of silver, the oxide of zinc—or, lastly, digitalis, the subject of the treatise.

We are informed by Dr. Sharkey, that about nine years ago, his father published a paper in the *Lancet* on the Use of Digitalis in Epilepsy—but no notice has since been taken of the remedy by any authors. Some of these cases are re-stated by Dr. Sharkey, and others are added. We shall condense some of the more interesting of these.

Case 1.—Miss Fowkes, aged 17 years, had been epileptic for twelve months, and commenced the present plan on the 4th Sept. 1817.

℞. Fol. digital. purp. recent. ℥iiss. contunde in mortario in pulvam; deinde adde cerevisiæ fortioris Oj. infunde per horas septem, deinde cola exprimendo. Capt. liquoris colati ℥iv. cum pulv. fol. Polypodii quercus siccatorum, aut radicis siccate gr. x.

5th Sept.—In ten minutes after taking the draught yesterday, she had a fit, but shorter and less severe than usual. She vomited frequently and violently till twelve o'clock to-day—pulse sunk from 120 to 54, intermitting and irregular—great headache and pain in the epigastrium—cramps in the legs—extremities cold. 6th. Had no fit—vomiting continues till ten A.M. to-day—pulse 40, irregular—great prostration of strength—pupils dilated from the beginning. 7th. Continues to vomit bilious matters—pulse 40—fæces bilious. 8th. Continues free from fits—vomits much—pulse 60, irregular—great debility—pupils dilated. 16th. Continues free from fits—strength restored—pupils contract—appetite good. Our author watched this case for two years, and there was no return of the fits.

There is no description of this young lady's fits, but from some expressions, they appeared to have been almost daily, before the Herculean remedy was applied. This is not the character of epilepsy. We have little doubt that the case was one of those anomalous hysterical convulsions to which many females are subject. But whatever was the nature of the malady, we think the patient was as nearly destroyed by the remedy as any could possibly be. We should be extremely sorry to exhibit such a dose to a young female, or, indeed, to any one.

No. LXVIII.

B B

Case 2.—A gentleman had been afflicted with epilepsy for twenty years. He was of robust form, sanguine temperament, great abdominal congestion, but general good health.

"He was treated by several physicians of eminence, and pronounced incurable. Amongst other remedies, he took nitrate of silver, to a large amount, which discoloured him horridly, without advantage. Suffice it to say, for the sake of brevity, that I had him under preparatory* treatment for two or three months without any abatement of the fits. I administered the digitalis and polypody (the leaves) to him as above, with similar effects. The prostration of strength and diminution of pulse in this case was absolutely frightful. He has had no return of fits for ten years.†

I also cured his brother six years ago, who likewise has been since exempt." 22.

Case 3.—This patient was insane as well as epileptic. When the dose was given, the pulse was 140. He refused to drink gruel after the dose, (which, we observe, was generally given,) and did not vomit till the next day, and that by the assistance of ipecacuan. His pulse had fallen to 56. He was removed to a lunatic asylum, where, it is said, he recovered his reason, and remained free from fits.

In two or three other cases of epilepsy complicated with uterine derangement, the treatment failed in the hands of Dr. Percival.

In 1827, Mr. Scott published a case of hydrocephalus in a boy, nine years of age, accompanied by epileptic fits. The hydrocephalus was removed, but the fits continued to recur daily, and usually six or seven times in the twenty-four hours.

"They were generally preceded by twitchings of the facial muscles, but sometimes gave no indication of their approach. Leeches and blisters to the head were first tried, but with the effect of rendering the fits more frequent and severe. He then was put upon the use of Tinct. Digital. which was gradually increased so far as gtt. xii. three times daily. Under this treatment a cessation of the fits for four months was obtained, but the twitches continued. The digitalis was now stopped, and the fits returned; but were milder, and recurred once in ten days. The mother of the boy having observed that the twitches were more violent at the approach of the fit, adopted the plan of giving the Tinct. Digital. freely when these were observed; thus the twitchings were diminished, and the fits apparently prevented. She sometimes gave as much as a teaspoonful at once. On one occasion the boy got at the bottle, and drank the entire contents, (from two to three drachms,) producing the usual symptoms of an over-dose, which were removed by the administration of brandy and opium. He had two severe fits at the time. The mother's account was, that an amendment commenced after this." 26.

The final issue of this case is not stated; but it is perfectly clear that these fits were convulsive rather than epileptic.

A case is related in our Edinburgh contemporary, in which "fits of im-

* "Regulation of secretions, &c."

† "In reply to inquiries made of this gentleman, through my friend Dr. Wood, of Cork, I yesterday was informed 'that he never had them after; and that he also had an acquaintance who was subject to them, who was treated by my father with digitalis, and recovered.'"

perfect epilepsy co-existed with diseased heart, for a period of three years and a half." Digitalis, in doses of a quarter of a grain, was given, and when two grains were taken the fits disappeared. The case, however, is not very clearly stated.

Case 4.—There is a case published in the *Lancet*, October 8th, 1831, by Mr. A. Courtney, where a boy was seized with epilepsy at the age of 16 years, without assignable cause. He continued subject to fits for nine years, and, in the year 1802, took digitalis and polypody, in the following manner.

"Recent leaves of digitalis four ounces, infused for twenty-four hours in a pint of boiling water. When strained, this was divided into three doses, one of which was ordered to be taken every third day with fifteen grains of the dried leaves of polypody in powder. But such was the effect of the first dose, that his relations would not permit him to take a second; for, a few minutes after he had taken it, a vomiting commenced, which, in spite of every thing that could be done to allay it, continued almost incessantly for five days, accompanied with such prostration of strength, that it was thought at times doubtful whether he was dead or alive.' He never had a return of the fit up to the date of the communication." 28.

It is needless to advert to any more of these cases, because they appear to us very unsatisfactory, and as almost all of them have been already published. The author institutes a comparison between the success of digitalis, and that of some other heroic remedies, especially the oil of turpentine and the nitrate of silver. It need hardly be stated that the comparison is in favour of the remedy proposed by himself. But it requires not the gift of prophecy to foretel that this remedy will never come into general use. Digitalis, in the moderate doses of common practice, can be of no service in epilepsy—and in the doses recommended in this work, it would be dangerous, especially as it is a very uncertain medicine—some constitutions bearing it well, while to others it proves a poison. This uncertainty is far greater than with any other medicine in the *Pharmacopœia*. It is a very cumulative drug, sometimes appearing to lie dormant for a time in the system, till an explosion of alarming symptoms takes place, which, if not dangerous, are extremely distressing. The evidence in favour of digitalis does not appear to us so great as it does to Dr. Sharkey. We think the balance is far on the side of the nitrate of silver. The great objection to the latter—the discolouration of the skin, is now pretty well removed by the fact, nearly, if not completely, ascertained, that the oxide of silver does not produce the same phenomenon. The nitrate or oxide of silver never injures the stomach, but, on the contrary, proves one of the most powerful anti-dyspeptic remedies we possess. We have never met with a single instance of discolouration, where the exhibition of the nitrate was limited to three months. Dr. Sharkey never alludes to this immunity, though promulgated by the late Dr. Baillie, and others, long ago. Dr. S. seems to hint, at page 48, that the discolouration is "*an injury extending to their offspring.*" If Dr. S. can adduce an instance of this transmission of blue skin to the progeny, we shall be exceedingly surprized. We should just as soon expect to see the children of Greenwich and Chelsea pensioners born with wooden legs.

The greater part of Dr. S.'s work is occupied with physiological discussions respecting the operation of medicines, and especially of digitalis, which are really very ingenious, though not always conclusive, and indicate a talented and well-stored mind. We have only room for one extract from this part of the work.

“Precautions.—As fatal results have occurred in persons who were for the cure of other diseases put under the full influence of digitalis, from want of proper caution, it seems necessary to state here that a patient, under these circumstances, should on no account be allowed to assume the erect posture, for, in the instances alluded to, (which however occurred in persons labouring under debilitating diseases,) the first effect of such effort was to increase the rapidity and diminish the power of the circulation to such an extent as to produce, first, fainting, and subsequently death. And although I never saw or heard of any such accident in an epileptic so treated, and although, from its being a disease of unnatural excitability, I should say *à priori* that it was not likely to take place, yet the precaution is a proper one, and should in no case be omitted; more especially when we remember that in general the recumbent posture is less favourable to the epileptic invasion than the erect.* It is also better not to interfere with the course of its operation by the use of any stimulants, unless they are imperatively called for; should the necessity, however, arise, the means recommended in such cases should be put in practice. If, while the alarming train of symptoms mentioned as the effects of poisonous doses, (cold sweats, delirium, repeated faintings, convulsions, local and general,) have set in without the previous occurrence of vomiting; and if we fail in our endeavours to excite this by emetics, titillation of the fauces, &c. the stomach-pump should be used, ammonia and brandy administered, and in such cases, above all others, the horizontal posture strictly enforced. But I must again repeat, that the extreme case now supposed, is drawn purely from imagination, so far as my own experience of large doses of digitalis in this disease is concerned.” 73.

Notwithstanding our dissent from the author on some practical, and even doctrinal points, we recommend his work to our readers as well worthy of perusal.

PHYSIOLOGIE ET HYGIENE DES HOMMES LIVRÉS AUX TRAVAUX DE L'ESPRIT, &c. Par J. H. Reveill -Paris , Docteur en Medicine, &c. Paris, 1840. PHYSIOLOGY AND HYGIENE OF PERSONS WHO DEVOTE THEMSELVES TO INTELLECTUAL TOIL, &c.

It is generally believed by those who support life by corporeal labour, and eat their bread in the sweat of their brow, that physical inactivity is downright idleness. Such persons can have no conception that weariness can be contracted in an elbow-chair, by now and then peeping into a book, and

* This is surely an oversight of Dr. Sharkey's. Ten fits of epilepsy take place in the recumbent, for one in the perpendicular posture.—(Ed.)

musings the rest of the day. Hence it is that the sedentary and the studious raise their envy or contempt, according as they appear to possess the conveniences of life, by the mere bounty of fortune, or to suffer the want of them by refusing to work.

It is, however, certain that to think is to labour; and that as the body is affected by the exercise of the mind, the fatigue of the study is not less than that of the field or manufactory. But it is equally certain that the labour of the mind is not attended with the same advantages. Exercise gives health, vigour and cheerfulness, sound sleep, and a keen appetite; while the effects of sedentary thoughtfulness are diseases that embitter and shorten life; interrupted rest, tasteless meals, perpetual languor, and causeless anxiety.

In gratitude to men of literary pursuits for the sweet enjoyments they afford us by their intellectual toils, we are in duty bound, as medical men, to tender our advice to them, and to point out to them, the dangers to health and to comfort, and to every thing that can make life valuable, inseparable from excessive exertion of the brain—to show them, in fact, how much the noble functions of intellectual life wear out and debilitate material life; and how destructive the labour of thought is to physical existence. Nature, anxious for the preservation of this existence, has traced out laws, the rigorous observance of which is to be found only in the infancy of society, or in the habits of savage life: the empire of these laws decreases as civilization progresses; and when, by this progression, the study of the sciences has become generally diffused, we see their adventurous and enthusiastic admirers pursue them at the expense even of life itself. Now in virtue of the order established in the creation of living bodies all the organs mutually aid and balance each other; nature has attached enjoyment and health to the regular and free exercise of all the functions, whilst she visits with the tortures of disease the too frequent or too prolonged exercise of any one organ, and the predominance of any one physical or moral function.

Every man who observes and reflects will, nay must, admit that a reciprocal action takes place between our physical and moral condition. Of such sympathies, like many other mysteries of nature, *causa latet*, the cause remains concealed, while the effects are palpable and obvious. This close, yet inscrutable association, this latent correspondence of parts seemingly unconnected, this reciprocal influence of mind and body has long fixed the attention of medical and metaphysical enquirers. Can we, says a modern writer,* conceive the mysterious inhabitant as forming a part of its own habitation? the tenant and the house are inseparable, so that in striking at any part of the building you inevitably reach the dweller.

If we look around and survey animated nature, we shall find that man, and more especially civilised man, is of all animals the one most liable to disease. How then must it be with those men who carry within themselves the very moving, impelling, and creative principle of civilization? Every thing, which bears on social man, re-acts on their physical, as well as on

* D'Israeli's *Curiosities of Literature*.

their moral constitution, with an intensity almost always prejudicial to their well-being; every thing here combines to become an immediate cause of disease. A delicate organisation; or one rendered so by intellectual toil; extreme sensibility; and an incessant and habitual exaltation of this same sensibility; an imagination ever in a state of tension; the energies of the brain continually in action; a neglect and forgetfulness of those cares and attentions necessary to the preservation of health; what a crowd of causes calculated to destroy the springs of the human economy, and to undermine its strength; to render the body languid and consequently obnoxious to the effectual attacks of morbid agents; to convert life, in fact, into a continuous fever and a never ceasing struggle!! All diseases, to which the human race is liable, may become developed in men devoted to extreme intellectual labour. The elements forming their constitution, nay, their very thoughts, contain within them the germ and principle of a multitude of diseases, irritability, the great characteristic of deep thinkers, being the grand element which predisposes to inflammatory and nervous disorders. However, as every temperament has a particular tendency to some particular order of diseases, it is also observed in the case of studious and deep-thinking men, that some pathological affections are more frequent in them than others. Thus the delicate frame of Kirke White, who gave such extraordinary promise of great poetical genius, was doomed to become an early victim to pulmonary phthisis, the progress of which, though the seeds were probably laid at an early period of existence, was no doubt accelerated by the ardour and enthusiasm with which he prosecuted his favourite studies.

“ ’Twas his own genius gave the final blow,
And help’d to plant the wound that laid him low.”

We fancy we hear some laborious and enthusiastic student, whose declining health, induced by incessant study, has already awakened the alarms of his anxious friends, reply to their fond remonstrances, when dissuading him from his destructive course, in the indignant language of the Roman Satirist—

Et propter vitam vivendi perdere causas!!

Yes: with such an individual, mere physical life is not worth having; it is only in the intellectual and metaphysical regions of abstract meditation and intense thought he feels that he

——— “ lives, and moves, and has his being.”

The mere matter-of-fact person, however, who attaches some importance to the condition in which the mind’s tenement is kept, who condescends to feel that there is some sympathy between his mind and the body, and that on this sympathy much of the happiness and misery of ordinary mortals mainly depends, such person, entertaining a less sublimated, we admit, but in our opinion, a more correct view of the matter, may reply to the above quotation in the forcible language of Martial—

Non vivere, sed valere, vita est, ———

Having thus introduced the subject of our author's work to the notice of our readers, we shall proceed to give an analysis of its contents.

The object of the author, in the first part of his work, seems to be to reduce every thing, no matter how refined in intellectuality, to the property or function of sensibility, and thus to explain by the laws of this function the moral existence of men the most distinguished for their works and their genius. These men, he says, predisposed to lively sensations and ardent emotions, (for in them the impression surpasses in intensity and duration that which occurs in ordinary mortals,) become voracious of these very sensations. By the mass of ideas which they acquire in a short time, they soon attain a vast store of knowledge; then endowed with a capability of expressing this, and carried away by their own thoughts, they feel an irresistible desire of communicating them to the external world. These thoughts it is which impose laws on kingdoms, become the vivifying strength of those mighty souls destined to civilise, elevate and degrade nations. Cromwell, in his time, was the visible destiny of the moment, as Napoleon was in ours. Now, he asks, how is such vital and intellectual activity compatible with tranquillity and regularity of the system? Is not life in excess here, as well in the moral as in the physical being? Observe, accordingly, that incessant inquietude, that unremitting and restless activity, that internal ebullition, which is every instant disturbing the organic powers, that feeling of life so intense and occasionally so painful, which imparts to the existence of distinguished men something violent, restless, feverish and inexplicable, something, in fact, altogether out of the routine of ordinary life. This state of inquietude either ceases altogether, or at least diminishes, when life is very active, or when the torrent of ideas is allowed to flow. Such a crisis is in general salutary. It is then those master-pieces are produced, then it is those treasures of the imagination are poured forth for the relief and satisfaction of the individual's self. Poetry is in the poet just as sound is in the lyre; this is a positive philosophical truth.

Men of genius often work without caring what becomes of their work, and merely to satisfy themselves. Our author next anticipates an objection which may be urged against these principles; namely, that they hold good only with respect to artists, whose imagination is more ardent than that of the savant. This, however, he conceives to be a mistake. The savant, he says, who is endowed merely with the capability of knowing, is but a mere man of learning; he knows what has been already done; but when possessed of high intellectual faculties, should he wish to extend the boundaries of science, he investigates, invents, and *imagines*. In this view he is fully borne out by every day's observation. There is no individual in the social, civil, or philosophical world, who has more frequent occasion to draw on the stores of imagination than the natural philosopher, in order that he may be able to account for the phenomena presenting themselves in the physical world. Should the facts refuse the imagined explanation, it is a mere idle theory or hypothesis: if, on the other hand, the facts correspond with it, and the theory so imagined be but the expression of them, a progress is made. To seize on a general principle, to investigate its most remote consequences, and to trace them with a force and vigour of thought capable of attaining great results; then to express and generalize this principle, so as to render it applicable to every thing which may be deduced from it; such

an intellectual performance is but the flight of a powerful imagination. Homer and Archimedes were in the same category with respect to invention. So that this ardent sensibility of soul, which impassions all its ideas, is found as well in the philosopher as in the artist; it is the same enthusiasm for their works, their conceptions, their theories, or their systems. In fact there is just as much of vivid imagination in first conceiving such hypotheses as the *Anima* of Stahl, or the *Archæus* of Van Helmont, as in imagining the most unsubstantial creations of the most fanciful poets; with this difference, however, that stubborn facts may sometimes be adduced to test the truth of the physiologist's imaginings: from which ordeal the poet is quite secure.

Our author now goes on to shew that, in consequence of this intense feeling, these existing and powerful emotions of great minds, the faculties sometimes become debilitated. The soul, as it were, becomes dried up, just as the body of the sensualist is enfeebled and worn out. The cause of these phenomena is one and the same. However superior the organization of the nervous system may be, it cannot go beyond certain limits. The intellectual and moral life, though the primary, essential and true life of man, yet like every vital act, requires to be kept within certain bounds. Should we wish to give to the faculties of feeling and of knowing an unlimited extension, the organism soon refuses to respond to such exertion; it becomes enervated more or less rapidly. Then it is the man of genius becomes a prey to his own extravagant ideas. He still desires; but what does he desire? what does he wish? why does he sigh? he knows not. This ardent aspiration of the faculties after something undefinable and increate, such a soul, sometimes carried up to the third heaven, sometimes saddened and depressed even unto death; those flights of a delirious, restless imagination, without apparent end or determinate object, have been frequently observed and as frequently described. Such a state really exists in certain individuals endowed with great moral energy exercised too early and without moderation.

An additional proof that this extraordinary state depends on sensibility prematurely exhausted is, that the imagination, no longer finding any external element, turns in upon itself, and makes prodigious efforts to combat the evil effects of ennui and of too much thinking. Flying from one abstraction to another it ultimately rests confiding in the truth of Rousseau's oft repeated maxim:—*Il n'y a rien de beau que ce qui n'est pas*. Now the first origin of this is an extremely excitable nervous system, an incessant and active sensibility. The most out-and-out spiritualists are often reduced to this same consequence in spite of themselves. Pascal says truly, "we must not forget ourselves; we are body as well as mind." Plato, that prince of spiritualists, so famed for conceiving and embodying the most sublimated abstractions, says, that "every pain, every pleasure, has, as it were, a nail, whereby it fastens the soul to the body, assimilates it to itself, and makes it believe that nothing is true but what the body has told it."

Nature has then wisely ordained that the harmonic play of our sensations should be successively excited with various shades of activity and strength; but she at the same time apprizes us, that it is madness to desire super-human impressions with our present state of organic debility, or to require of life more than life can give.

THE TWO WAYS IN WHICH LIFE MANIFESTS ITSELF.

Without infringing on the principle of unity, it may be said that life presents itself under two general and perfectly distinct modes, *sensibility* and *contractility*; the former depending on the nervous system, the latter on the muscular system in general; these two modes of vital manifestation have been called *innervation* and *locomotion*, the *sensitive powers* and the *motive powers*. These two properties are found in all the phenomena of life, though in different degrees; their development is often in an inverse ratio, yet it is sometimes simultaneous. After pointing out the progressive perfection of the nervous system from the individuals constituting the lowest class of animality up to man, in whom it becomes the type of the most perfect organisation, and after shewing the vast importance and immense extent of the diversified ramifications of this system, whereby it surrounds the entire economy in a sort of nervous atmosphere, our author comes to the enquiry as to how impressions take place, and how the cerebral influence is propagated—he here enumerates the various hypotheses which have been given in order to account for this effect; but acknowledging the unsatisfactory state of our knowledge on this point, he gives up the investigation, and next comes to the consideration of SOME OF THE MOST GENERAL LAWS OF SENSIBILITY.

The *action* of the nerves has for its results sensibility; that is, an aptitude to receive impressions, whether from the external world, or from the organism itself. These impressions, transmitted to the individual, *to self*, become perceptions, intellectual and moral acts; and these acts, in their turn, manifest themselves externally by a re-action of the nervous centre on the periphery. Thus, on the one hand, we have impression, transmission, action; that is, an intelligence which knows, a will which determines, and a power which acts: such is the fundamental law of sensibility, considered in its greatest possible extent. And thus our author will have it, that this property of living beings is not a mere passive property, a mere *receptivity*, according to the doctrine of Kant and his followers, but that there exists a proper and palpable activity of the nervous system taken as a whole. This system, then, being the material and indispensable condition of the modifications of thought and feeling, the measure of its perfection will be the measure of the intellectual faculties in the scale of beings.

It is, our author observes, to this system that man owes his superiority. The study of the nervous system considered from one animal to another, presents immense differences, both in an organic and mental point of view. Nor is it in the different classes of animals only these differences are remarked, but also in individuals of the human species. Thence results an extreme variety in the capacity of feeling, and consequently a greater or less development of the intellectual faculties. Generally speaking, we appreciate the energy of life by the force, duration, and frequency of our sensations. Now the more adapted the organ is to feel, the more marked in us is the desire of being moved, and of being, as it were, apprised of our existence; there are some persons who cannot be satisfied in this respect; they indulge in this desire even at the expense of their well-being and health. On what, our author asks, does this *voracious appetite* for sensa-

tions and mental emotions depend? on nothing else than a very complicated nervous apparatus, endowed with an extraordinary capacity for feeling; a capacity which is only increased by the multiplicity of the impressions made on it. This desire of mental emotions is more especially remarked to exist among civilised nations, and is justly considered to constitute the elementary principle of the fine arts. Harmonious poetry, enchanting music, are judged to be such only according to the sensations which they excite in the reader or hearer. It is the very perfection of art when the reader is so swayed, so completely subdued, as that he no longer knows whether he holds a book in his hands. In what does this great, this grand secret consist?—in multiplying the impressions, in striking the imagination, in, as it were, pricking the nerves with the stings of the mind. Thus the sphere of action of the nervous system, as of all the other systems, increases with the extent and perfection of this same system. There is another law influencing the sensibility of relation, which is not of less importance; it is this, that it manifests itself in two ways, *pleasure* and *pain*. The former includes every sensation which we would wish to prolong, and which seems useful to the system; whilst the latter includes every sensation which we would wish to repel, as injurious to existence. And is it not obvious how well the organic movements accord with this explanation? Should the sensation be pleasing, instantly all the movements become expanded, the tissues unfold themselves, nature seems to present the greatest possible extent of surface, so that no part may escape the impression; whilst in pain, on the contrary, these same movements become constrained, the tissues contract, nature presents a *minimum* of surface to the enemy, as if she wished to escape him, or as if she wished to concentrate her strength to combat him. Pleasure and pain are real elementary sensations, the two poles of sensibility; for the other sensations are but shades of them. It may be remarked, also, that what is called *moral sensibility*, in a similar manner presents only two primary or fundamental feelings, namely, love and hate; both being the grand principle of our passions, whether such passions be of an exciting or depressing kind. Accordingly pain and pleasure have but one common origin, and are therefore closely connected. There are painful sensations which are not without their charms; and at the extreme of pleasure, pain commences. The latter, as we see, is necessary and indispensable to the regularity of the functions, it being, as it were the exciter of the conservative principle, the signal and cry of the suffering organ; nor has it, indeed, been clearly shewn which is the more injurious or the more useful to man, pleasure with its roses, or pain with its thorns.

Whatever be the activity of these two sensations, neither of them can be continued, intermission of action being one of the characters of sensibility. Like to all the other functions, cerebral sensibility, with which we are at present more immediately concerned, presents alternations of rest and of action: these intermissions are necessary for its reparation, which is completed only by sleep. This law of intermission of action now under consideration is of the highest moment not only for bodily health, but also for mental or intellectual energy, and for every thing connected with cerebral action.

It may again be observed, that this intermission not being complete, nervous action never presents that character of uniformity and steadiness

remarked in other functions. Mobile, inconstant, exceedingly variable in its intensity and energy, sensibility often passes, with astonishing rapidity, from the lowest degree of prostration to the highest point of exaltation. It is a free, an *independent* faculty, as incalculable in its effects, as unknown in its cause. Alternately ardent, strong, prostrated, exalted, it pervades and stimulates certain organs, and suddenly abandons them for others. Its proportions never continue the same in any one organ; fixity, permanence, or precision of action are never to be predicted of it.

This law of *mobility*, which is so important, gives rise to another no less essential to be known, we mean the law of *concentration*. It has been said that it was with sensibility as with a fluid of a given, determinate quantity; which, if it flow plenteously in one of its channels, becomes proportionally diminished in the others. The comparison is by no means deficient in justness. It is certain that the more an organ is excited, the more sensibility becomes accumulated in it, and always at the expense of the sensibility in other organs. This simple law of physiology, observed from remote antiquity, is probably one of the most fruitful with respect to disease, hygiene and philosophy. Confining our remarks to the intellectual faculties, we may observe, that this law of concentration is what is usually called contemplation or meditation, which is combining or bringing together all the data on any subject whatever, so as to examine them, and to discover all their relations, and to deduce consequences from them. These consequences are then applicable to the arts and sciences. Thus thought becomes the greatest of human powers. If genius be, as it were, the focus of a burning glass, which throws heat and light only on one point, it must certainly be so by its power of condensing the nervous action with the greatest possible force. Such is partly the origin of the high intellectual faculties, the happy or sad prerogative of certain men destined to agitate, excite, and transfix inferior minds. It may be objected, that we are here confounding the action of the brain with sensibility in general. To this we reply that the nervous system is identical in all its parts, and that as sensitive unity or unity of sensation is indispensable to unity of being, since it is what constitutes it, there must be some one organ to sympathise with all, to communicate with all parts of the system; this organ is the brain. Nor is it less true, however, that if this organ is always the point of concentration of sensibility, the other organs soon become changed by the deficient supply of that innervation which is necessary to their normal action. This is one of the causes of the loss of health in those who exercise the mind immoderately. We already see the origin of those evils which torment the man of genius, and which are engrafted as fruits of death on the tree of life.

We may further observe that, in certain cases where cerebral excitement is carried to the highest degree, the other organs are almost insensible to external impressions. The soul no longer perceives any thing external; and the individual or *self* seems to be brought back to his state of metaphysical simplicity. Mental abstraction, enthusiasm, contemplative ecstasies, certain diseases, as delirium, or catalepsy, shew that these phenomena are not uncommon. They are also observed in those engaged in profound meditation. Archimedes, when intent on solving a geometrical problem, was, one might say, a mere intelligent abstraction, when the Roman soldier

struck him. Tertullian well said of the enthusiastic martyrs of the Christian faith: *nihil cruc sentit in nervo, cum animus in celo est*. Such a state however cannot last: the disproportion of the innervation is too great not to destroy the equilibrium of the functions.

What has been now said of the variations and oscillations of sensibility in general, is equally observable in the intellectual faculties, more especially when they are very active and very much developed. There is one in particular, which presents this character in the most striking manner, and that is the imagination. There is no intellectual faculty which presents more variety in its energy, in its degrees of depression or elevation than this. What some have called its *prism* is nothing but the different modifications of an extreme cerebral sensibility. The mobility, and inconstancy of the imagination are the facettes of this prism, the reflexions from which convey to the soul alternately and with surprising rapidity, the sensations of joy the most lively or of melancholy the most profound. Moral sensibility, like its great origin, physical sensibility, is subject to certain laws. Rigorousness of method, fixity of rule, are never applicable to it, especially when it is active and predominant. If it be asked whether calmness of the senses, tranquillity of the heart, the gentle undulations of thought, which prove so well the moral and intellectual harmony, are attributes of beings eminently sensitive: we say, undoubtedly not. And the reason is, because the force of impulse, the exciting power, is always either too weak or too energetic, the difference of the effects being directly proportioned to the variability of the principle of action. This explains why the character of individuals strikes one at once by certain inequalities invariably owing to the numberless fluctuations of sensibility. It has been truly said that a long catalogue might be drawn up of the terrors felt by the brave, and of the absurdities fallen into by the man of mind; that it is physically impossible to continue a great man from morning till night.

Very remarkable effects oftentimes result from the excitations and these extreme and continual variations of sensibility. The one is a complete exhaustion of this property, a total prostration of the physical and moral powers; whilst the other, and one which is much more common, is that the nerves acquire so great an excitability, that the slightest stimulus will occasion a nervous action totally disproportioned to its cause. The consequence of this is, that the *intensity* of the sensation will depend less on the intensity of the cause, than on the disposition of the individual.

This state of extreme irritability, when carried to its highest pitch, is justly considered a disease. It has been further observed, that acute senses, excessive nervous irritability, feelingly alive to the slightest physical and moral impressions, will generally, if not always, be found to correspond with a mobile, irritable, and inconsistent character. Such a constitution again re-acts on the organs and disturbs their functions; the mind every instant throws its incasement into confusion. Every one must have observed such a person, either suffering or fancying that they suffer, without being able to assign the slightest cause for it.

Sensibility is thus the property *par excellence* of organized living beings; it attains its highest amount of activity in man; it is by it he exists, acts and lives; in a word, sensibility is, as it were, the material of which life is made.

This property, however, is not merely the moving principle of organic action ; through the medium of our consciousness it becomes the source of our pleasures and pains ; it influences the character, the propensities, the will, the ardour or weakness of the imagination, the violence or moderation of our desires, the activity or inertness of the intellect. Considering the matter physiologically, we may say that man is what sensibility has made him.

The second form in which life manifests itself is contractility ; a property which resides more especially in the muscular system, though always under the influence of innervation. The most contractile organ in the body is also the most sensible. The heart is of all muscular organs the most irritable, and it is also that which seems most under the immediate influence of the brain—hence it may be fairly inferred that sensibility and contractility have their origin in the nervous system. We know that a violent electric shock, or poisoning by prussic acid can destroy both, and that in this way life is arrested at its very source.

We may remark, however, certain differences between these two properties with respect to their mode of action, and the phenomena which they present.*

Sensibility receives impressions and transmits them ; contractility triumphs over all external obstacles, whether instinctively or consciously. Sensibility, a careful sentinel, keeps watch within and without ; but it is contractility alone which acts and re-acts. Properly speaking, sensibility or nervous power is the regulating principle, which warns, directs and commands, whilst contractility, or muscular power, is the agent which obeys and executes ; it is, as one might say, strength personified. These two properties are mutually dependent on each other. Without contractility, sensibility would be devoid of result, action, or influence ; without sensibility, contractility would have no mover, nor director. Sensibility is the first called into play ; it appreciates the relation which exists between the exciting body and the degree of organic re-action requisite, whilst it is to contractility that such re-action is confided. The animal and vital functions come within the domain of contractility. We may here observe that sensibility, when exalted to a high degree, is capable of communicating to contractility an extraordinary, though always irregular, amount of energy, as we sometimes see in the cases of maniacal and hysterical patients when they are convulsed.

THE FUNDAMENTAL LAW INFLUENCING THE TEMPERAMENT OF PERSONS DEVOTED TO MENTAL EXERTION.

If all parts of the human body possessed the same degree of energy ; if we could attain a uniform and constant equilibrium of the organic powers, there would then be no such thing as *temperament*. Then we should have the *beau idéal* of physiological symmetry ; but such a thing does not exist. One or more systems of the animal economy, or some one important organ,

* Of the anatomical difference of the two orders of nerves on which these two properties depend, we shall take no notice, for obvious reasons.

obtains the mastery, and this gives rise to what is called *temperament*. When to this physiological condition other circumstances are added, such as peculiar habits of life, education, climate, or diseases, such temperament becomes modified, it becomes increased or diminished according to the nature and direction of the causes now mentioned.

Of all the powers of the system those probably which present most variety in their energy, are the *sensitive* and *motive* powers. Originally established for the purpose of aiding, balancing and moderating each other, in order to the preservation of health, it seldom happens that such action is duly proportioned. To feel and to act are the prominent duties or business of life; our preservation in *being* and well-being depends on the prudent combination of their action. But how difficult it is to keep them within the limits compatible with health! In some persons the sensitive powers obtain the mastery; they acquire, sooner or later, a marked predominance: the nervous apparatus is then endowed primarily and originally with a great capacity of action, a capacity, which only increases by the very inordinate exercise of this power. This increase is in conformity with a physiological law according to which an organ continually in action progressively acquires additional strength, energy and preponderance. But, on the other hand, and in virtue of the same law, if the sensibility is more active, contractility diminishes in the same proportions. The consequence of this is, that the nervous system attains the ascendancy in the animal economy, the vital powers become concentrated towards it, whilst the contractile vigor of the organs ceases to be proportioned to this abnormal state. Certain functions acquire extraordinary activity, whilst others become languid from defect of innervation. Hence it is the energy of the radical powers of the economy ceases, their distribution being no longer equal. Such phenomena are observable in extremely nervous persons, but more especially in persons who exercise their mental faculties too much. From these considerations the following *law* is laid down:

On the one hand: ORIGINAL NERVOUS DISPOSITION;

Then, EXCESS OF ACTION;

Finally, EXTREME, CONTINUED PREDOMINANCE OF THE NERVOUS SYSTEM:

On the other hand: GRADUAL AND ALMOST ABSOLUTE DIMINUTION OF CONTRACTILITY.

Such, according to our author, is the fundamental law, the organico-vital condition; the predominant and distinctive character of this temperament, to the development and application of which law he destines his work.

This he calls the fundamental law, admitting at the same time infinite shades of it; as it would be wrong to suppose that men devoted to intellectual occupations do not participate more or less in those varieties of constitution described by physiologists. Predominance of the nervous system may, and in fact does, connect itself with all the known forms of temperament, though there be characters peculiar to each of these forms. Thus when this predominance occurs in bilious and melancholic temperament, it presents effects quite different from those occurring in the lymphatic temperament.

Our author here remarks that, notwithstanding the contrary opinion of several physiologists, both ancient and modern, the nervous apparatus may possess great activity, at the same time that the muscular system may have acquired very marked development. It is well known that that prince of

philosophers Plato* was famous for his square shoulders, and a vigorous constitution. Similar instances of active sensibility and muscular vigour combined, may be found among the moderns, for instance, Leonardo de Vinci, Buffon, Gluck and Mirabeau. It must be admitted, however, that this happy coincidence very rarely occurs.

This want of correspondence between the motive and the sensitive powers is more especially remarked in certain vital actions. Contractility, instead of moderating and balancing nervous action, becomes on the contrary subordinate to it. This sensibility in excess seizes on the muscles of animal life; it sometimes increases their action in an extraordinary manner when it becomes exalted; thus we see anger doubles and trebles the ordinary strength of individuals; at other times it stuns and paralyses these same muscles. Another effect of the same cause is, that the muscular fibre becoming more and more debilitated, is at length ready to contract on the slightest nervous excitement. Hence that extraordinary tendency to spasms, convulsions, and irregular contraction of muscles, whether of the voluntary class or not, so often observed in nervous and irritable individuals. The movements of such persons are in general impetuous, their gestures quick and abrupt; but it is in the muscles of the face the effects of these involuntary contractions are principally to be seen, especially when they are excited. Several distinguished men have exhibited these spasmodic symptoms. The Emperor Peter I. was subject to a kind of tic, which however did not frequently recur, but when it did, it affected his eyes, and his entire countenance, so as to render it terrific. Napoleon was subject to an *involuntary* movement of the right shoulder, and at the same time another movement of the mouth from left to right, when under great excitement. In such a constitution contractility is no longer confined to its natural limits, it is debilitated and incapable of acting according to the normal impressions of sensibility; its action being almost always irregular, whilst sensibility, augmented and exalted, predominates over all the functions of the system.

On the Effects of this Law on the Physique.—The first and most striking consequence of such an organic conformation is, that, he who has received it from nature, experiences a more keen feeling of existence than other men. He sees much, for he feels much. Great *affectibility*, which is the distinctive sign of this organization, is observed chiefly among poets and artists. Every thing strikes, every thing excites them, every thing is depicted to them with force and feeling. This characteristic facility of emotion and exaltation soon imparts to the whole system a mobility and acceleration in the vital acts, which cause the slightest impression to affect instantaneously the entire economy. There exists, in fact, a focus of life and action, the intense irradiations of which extend to all points of the organism. Salvator Rosa says that a painter is *all spirit, all bile, and all fire*, nor is this language as metaphorical as one might suppose.

It would be wrong to suppose that this vital energy was restricted to the brain itself exclusively. The nervous system is *one*, and consequently the

* He was called Plato from *πλατος*, broad, in consequence of the great *breadth* of his shoulders.

phenomena connected with it, are referrible to the parts which compose it, according to the order of their functions. Quick, and clear perceptions, rapidity of conception, require the perfection of all the nervous branches and fibrils. Exquisite delicacy of sensation demands, *à priori*, exquisite sensibility of the nerves. A rich imagination, often depends on a happy and tenacious memory, which itself requires in the peripheric nervous organs an extreme readiness to be affected. The delicate and exquisite feeling of the poet and the artist resides in the nerves, as well as in the brain. So that it is not the latter organ alone which predominates in the temperament now under consideration, but the entire sensitive system. If the visceral nervous apparatus re-acts, the brain is strongly excited; if the re-action commences from the brain, the sensitive powers at once become electrified.

It is now easy to see why this temperament is so mobile, and so readily affected; one might call it a sonorous instrument, which vibrates on the least touch, and by the slightest excitement. It has been well compared to the *Eolian harp*, which sounds on the slightest breath. The privileged persons to whose lot such a temperament has fallen, feel more joy, more annoyance, more love, more dislike, more transport, more ardour, more passions, more good and evil, and more enthusiasm, than beings endowed with an inferior organization. In the chances of human destiny a lot has been assigned to them replete with enjoyments and pains; this explains why all that life contains of pleasures and of cares, of sweetness and of bitterness, seems reserved for them; how it is that they are at one and the same time the weak and the strong among men, the favourites of Heaven, the idols of their own age and of posterity, and yet, too often, the unfortunates of this world. The fact is, it is because they are more men than other men, either for good or evil. If the degree of perfection of the nervous system indicates the degree of perfection in the animal scale, it is certain that there exists in certain beings eminently endowed with sensibility something above the rest of mortals. The physiological pre-eminence is the principle of the intellectual, and consequently of the social pre-eminence. It has been said that great men are the aristocracy of their species, it is true; but the fact has only been asserted; the object of our author is to establish the validity of the claim.

This superiority, however, is well counterbalanced. Why is it, asks our author, that Nature has impressed the seal of humanity, viz. imperfection, on this her master-piece? Two causes, he says, counterbalance these immense advantages. The first is, that the excessive vitality now under consideration, having its source in nervous power, is, like it, variable, irregular, and transitory. Such a state, far from sustaining, consumes and destroys life. There is energy, no doubt, and organic tension; but it is by convulsive starts it shows itself. Such individuals deluded by a certain factitious vigour, fancy themselves strong because they are excited; they know not that there is merely an unequal distribution of nervous power, and sometimes a spasmodic rigidity of the muscles. And as a proof that such is the case, do we not see that such a state lasts but a short time, that it is immediately followed by a *collapse* exactly proportioned to the degree of previous excitement. The delicate structure of men pre-eminently endowed with sensibility could not support this organic super-excitement if continued for any time. Every thing in it seems to evince an antipathy to mere flesh and

matter. The man most poetically organised, is in truth devoid of material strength.

The second cause of the deterioration of the *nervous* constitution is the more or less rapid diminution of contractility. We know that it is the nice adjustment of the different movements, and the exact balancing of the sensitive and motive powers that constitute the stability of vital energy. But no such thing is to be found in the constitution now before us. We do not mean to say that the excitement is, generally speaking, always uniform in the animal system; we know it varies more or less in different organs; but in a healthy and well-constituted body the equilibrium in the organic actions is soon restored according to a generally observed law. If however the nervous apparatus have acquired an extreme preponderance, this law no longer holds; the motive powers are degraded and debilitated, when the sensations are too vivid, too rapid, and too diversified and numerous.

Weakness or nullity of the contractile action of the tissues is felt in all the functions of the economy; the muscular system more especially falls into a progressive state of debility, which is always proportioned to the increase of action in the nervous apparatus, more especially if the individual devote himself to a sedentary life. The muscles become pale and diminished in size; the cohesion of their fibres is no longer the same; they often become atrophied; hence organic re-action becomes totally impossible. Nor is it to be imagined that the external muscles of animal life only are thus debilitated, those of internal and organic life share in this debilitating influence; a circumstance attended with the most disastrous consequences to the several important functions.

Every one must have observed, and sometimes with envy, the easy and rapid digestion of robust men, especially when they feel little, and think still less. It is evident here that not only nature is not drawn off by the brain from the great process of alimentary elaboration, but that the accomplishment of this act is accelerated by the powerful contractions of the stomach, intestines, diaphragm and abdominal muscles. Another advantage of this muscularity is that of retaining the food in the stomach for a sufficient time in order that it may there undergo adequate elaboration. The fibrillary oscillations of the muscular planes of the digestive apparatus, that which constitutes the intestinal peristaltic motion, more especially contribute to render the digestion complete; but these muscular strata are always pale, and attenuated, and sometimes scarcely exist at all in very nervous persons. The diaphragm, that powerful and active muscle, so necessary to the internal organs, also loses its contractile property, nor does any thing contribute more powerfully to produce that languor of the viscera observable in sedentary persons. This explains the connexions of several phenomena. On the one hand, we have painful and laborious digestion, hence badly elaborated chyle, impoverished blood, imperfect nutrition, the losses of the system not repaired, and great prostration: on the other hand, the appetite is either altogether gone or becomes fanciful, the sensibility of the stomach is irregular or depraved, and a permanent state of irritability or atony in the digestive passages. Besides it is observed that the biliary secretion is altered in its quantity and in the quality of its products. The liver, sometimes gorged with black and stagnant blood, often participates in this morbid state; it becomes sensitive and painful; it re-acts on the stomach, and the

concurrent affections of both are the ground-work of many pathological phenomena whose influence is soon felt on the morale.

Constipation, that daily torment of sedentary persons, and more especially of literary men, and such like, is not a mere *echauffement*, as is commonly said; when of long standing, it is evidently to be attributed to *muscular atony* of the intestinal canal. *Defecation*, a function so important to health, is effected only by the simultaneous action of the large intestine, the diaphragm, and the abdominal muscles. Is it not evident then, that muscular power alone is called into action in the exercise of this function? *Flatulence*, moreover, which is so annoying a symptom of bad digestion, is decidedly owing to a defect of vigorous contractility in the digestive system. The abdomen becomes tense and swollen, the debilitated organs contained in it being inordinately distended by the intestinal gases.

This diminution of contractility, and the aberrations of the nervous power, likewise influence the circulation. Witness the palpitations of the heart, and the irregular movements of this organ so frequent in irritable and nervous persons. The circulation is sometimes slow, sometimes rapid, occasionally suddenly interrupted, but always unequal, and rarely presents in this temperament a calm and regular rhythm. Sensibility, and consequently the sensations and various emotions, have too powerful, too direct an influence on the heart for it to be otherwise. The imagination, always active, and rarely confined within the narrow limits of the necessary, the real, and the possible, is every moment disturbing the system. It is said that Madame de Staël, in her youth, could not look at a person of distinction without feeling violent beatings of the heart; at so early a period was her state of health changed.

This deficiency of contractile vigour in the circulatory apparatus, accounts for a phenomenon, which always astonishes even medical men; namely, the slowness and weakness of the pulse of sensitive persons, more especially observable when they are not in a state of agitation. Napoleon's pulse is said to have been but forty-five per minute; moreover, the heart's contractility was so little marked in him, that the action of this organ could scarcely be felt on applying the hand to the chest, even before the occurrence of that *embonpoint* into which he fell in later years.

It happens, however, that the circulation occasionally seems to increase its activity without any known cause. There is then what physicians call a *nervous pulse*, an appellation as just as it is true. This pulse characterises mere nervous excitement of the circulation. So true is this, that experienced practitioners are extremely cautious, in this case, in bleeding largely if the subject be weakly, experience having taught them that this increase of action was but apparent.

This singularity of the circulation, joined to diminished contractility of the heart and vessels, and consequent diminution of the velocity of the blood even from its very outset, produces another phenomenon which must not be overlooked, and that is, the unequal distribution of this fluid. The head, abdomen, and principal viscera, are sometimes in a state of *plethora*, whilst the blood cannot reach the surface and extremities without difficulty. Projected with but little force by the heart, circulating slowly, either from want of energy in the *vis a tergo*, or defect of tonicity in the capillary vessels, the blood seldom tarries on the exterior of the body. Thence, independently of

other causes, the frequency of visceral congestions, coldness of the extremities, so distressing to studious and sedentary persons; thence, also, that habitual paleness so general indeed, that one of the fathers of the church calls it the beautiful complexion of great men.—*Pulchrum sublimium viro- rum florem.* (S. Greg. Naz. orat. 14.)

The respiration equally participates in the effects of this organic state. If it be true that the entire mass of blood passes about twelve times an hour through the heart and lungs, the expansion of the thorax must be performed with promptitude, facility, and in suitable proportions. But the weak state of the muscles, the frequent spasmodic constriction of the chest, diminish the extent of this cavity. These constrictions sometimes produce so sudden a reflux of blood into the heart and lungs, as to cause instant death. Thus Moliere died of pulmonary apoplexy. The effects, however, are generally more slow in developing themselves. The blood, impeded in its course, stagnates in the pulmonary parenchyma, it presses on, and gradually breaks down the meshes of this tissue; it separates and severs the fibres of the heart. Such is the origin of an infinite number of diseases, such as hæmoptysis, latent inflammations, aneurysms, &c. The oxygenation of this fluid is also imperfect, and venous plethora manifests itself at an early period with all its annoyances. Thus then it will, nay it must, be admitted, that the capacity of the thorax, the extent of respiration, a free and easy pulmonary circulation, regularity in the movements of the heart and arterial trunks, the reparation of the blood by the oxygen of the atmosphere, depend in a great measure on the development of muscular power.

Even the secretions and the functions of absorption are under the influence of contractility, as most of them become languid, when the energy of this property is diminished. With respect to animal heat and its various modifications, though the same causes cannot be assigned, still it must be evident that the calorific phenomena of the animal economy are closely and intimately connected with nervous action. Certain it is that, when there is an extreme predominance of this action, the animal heat has what may be called a special character: it is acrid, biting, and irregular; it is that *nervous heat*, remarkable more especially at a certain age, and widely different from that moist, mild, uniform heat, which generally attends the sanguineous temperament, and the period of youth.

On now passing to the external appearance of the body, we shall find the clearest signs of the exaggerated influence of sensibility over contractility. Every one feels anxious to see the person of a distinguished man—and yet how seldom does the reality correspond with the idea previously formed of him. The great man, on a close inspection, is seldom the man of his works; we look for him, if one may say so, when he is present: *adeo ut plerique, viso eo, querant famam, pauci interpretentur.* In such cases it is obvious that the material element having been consumed, the body presents but a mere shadow of an appearance, exhausted as it is by the violence of the sensations and activity of the mind. Most great men, with few exceptions, are small in stature and in appearance, more especially when they have attained a certain age. Their feeble arms announce that we must seek elsewhere for the cause of their power: in a word, all their exterior bears the imprint of a feeble organization, which has sadly changed, and which has suffered deeply. There sometimes may be observed, in such cases, an invincible re-

pugnance to exertion; whilst at other times the opposite feelings are evinced, but only by starts and temporarily. Sometimes the skin is devoid of colour and pale, the muscular fibre soft and flabby; whilst at other times the integuments are of a dark yellow colour, and the muscular fibre dry and somewhat tense; but it is rare to find, even in northern countries, that brightness of the physiognomy, that rosy tint, that character of freshness and of life, which indicate blooming health, and a full and free circulation. The body is often emaciated; yet sometimes we may observe extreme embonpoint at a very early period, a sure symptom of premature debility, as in the case of Gibbon, Fred. Schlegel, and Napoleon. Voltaire exhibited in his own person a striking ensemble of all the effects of an overwrought sensibility. "His emaciated form," as M. de Segur says of him, "retraced to my mind his laborious works. . . . his piercing eye sparkled with genius and archness; one might see in them at one and the same time the tragic poet, the author of *Oedipus* and of *Mahomet*, the profound philosopher, the ingenious romancist, that mind which so closely observed and so well satirized the human race. His *attenuated* and *curved* body was but a thin, almost transparent covering, through which his very soul and genius seemed to appear."

Yet, as our author well observes, it is not always that the exterior of illustrious men indicates what they really are; one cannot always divine that mobile, that impassioned temperament under the fleshy covering which encompasses them. In no case is that well-known expression of *volcano covered with snow* more applicable than here. Bonaparte, who so long presided over the destinies of France and Europe, exhibited nothing in his youth which could afford any indication of what he was to be. The same may be said of other illustrious men.

The physiognomy alone is often sufficient to discover the man, to whom Nature has been prodigal of her gifts. A broad, angular forehead, furrowed by the traces of grand and sublime thoughts, and eyes sparkling with fire, communicate to the countenance an animated expression, and surely with such a countenance, "marked," as Lavater says, "with the finger of God," the man cannot be a fool. And yet there are numerous exceptions to this law. Men of vast minds have been often observed to have but a very inexpressive physiognomy, as is evident in the case of Cromwell, Churchill, Johnson, and more particularly Goldsmith.

We must not, therefore, suppose that the outward appearance of distinguished men corresponds exactly with their genius and intellectual endowments, though such a thing often happens. The long sustained activity of the sensitive powers, the continued course of reflection and meditation, ordinarily concentrate the vital powers in the brain and internal functions, whereby the organs of motion, the source of physical power, gradually lose their size and energy; the body becomes debilitated, and no longer corresponds with the internal activity of the mind.

Such are the effects produced on the organization by the preponderance of the sensitive powers over the powers of motion.

Our author next proceeds to consider the effects of this law already stated on the intelligence in general, and commences with a remark of Pascal's, already referred to, pertinent to his subject; namely, that "we must not mistake ourselves; we are body as well as spirit." The study of man, he

says, considered in his phenomena of organization, proves that the moral sensibility is, as one might say, the consequence and reflection of organic sensibility. This principle cannot be invalidated; it is fully borne out and supported by anatomical research, by the laws of organization, by pathological phenomena, and by the lives of distinguished men. Thus, then, a very active and well-developed nervous system imparts to the mind a great power of manifestation. Every man in whom this apparatus, as well as the principal centres which compose it, predominate, presents to the observer an order of phenomena as extended as they are varied, in their succession as also in their modifications.

Without dwelling on particulars, we may first remark that sensibility, taken in its fullest development, presents—

- 1st. The capability of feeling;
- 2nd. The capability of knowing;
- 3rd. The capability of expression.

These three forms of one and the same power present striking differences in their action. The first is simply passive; there is merely a transmission of impressions; the second requires a certain activity of the brain; whilst the third, pre-eminently active, is the complement and acmé of intelligence; whence it is that it is much more rarely found in a high degree of perfection, than either of the other two. Most men feel, and even keenly, but the capability of giving expression to those feelings is given only to a very small number, to the few, *quos æquus amavit Jupiter*. Some philosopher has said, "if we were obliged, when writing, fully to satisfy ourselves, I do not think we would write one page in our whole life. We admire the *Æneid*, and justly, and yet Virgil wished to burn it." Voltaire said that he should die without having written one piece to his own taste or satisfaction. Those who are most gifted in this respect, never express all what they feel and as they feel. Thus unfortunately genius is always cramped from the insufficiency of the means of expression. So that the same organic constitution, which renders the individual susceptible of strong emotions, is not always sufficient to enable him to present the image of them externally. The man of genius lives and dies, tormented with the inability to reproduce the type of ideal perfection which he feels. Eternally confined and restricted by material possibilities, he is worried and worn out in his fruitless efforts to attain them. He desires to bathe in the waves of celestial light, but he sees these waves for ever retiring from him. So that in the arts of the imagination the most difficult point is not to think or to invent, but to embody those thoughts, so as that they may strike and captivate. Still organic sensibility is the prime basis of genius and talent, as it is there we must seek for the first element of sentiment and inspiration. From this sensibility that electric spark is given off, which arouses and inflames the ideas, thoughts, and passions. "Those germs of eloquence which reside and ferment in the bottom of the soul, and afterwards dart forth in such rapid flashes; that powerful, enrapturing eloquence, which electrifies from heart to heart the inert crowd, and raises it, as Jupiter raised the gods, those thoughts of fire, those animated words, which heat the imagination and subdue the understanding, are, after all, but the impetuous and ardent movements of a privileged and strongly stimulated sensibility."

Thus the action of the nervous apparatus is constantly represented to our

eyes. This action is so marked in the great moral perturbations, that it influences the play of the other functions. Thus the conditions of the system being no longer in due proportion, all the springs and departments of life participate in this activity of the nervous system. It is remarkable also, that the metaphorical language of all nations represents with exactness and precision the effects produced on the œconomy by an exalted sensibility. "The blood freezes, the eyes sparkle, the heart burns, we shake and tremble with fear or hope; we are pale with terror, swollen with pride, panting with desire, &c." In a word, the organic disturbances and the intellectual emotions are perfectly proportioned, evidently because their source or origin is identical.

The second part of the work is devoted to the subject of what may be called pathological physiology, or the phenomena of life in the state of disease, and commences with the—

Predisposing or General Causes of Diseases of Persons devoted to intellectual Labour.—The first of these causes set down by our author is a delicate, mobile, impressible organisation, where the feeling of life is almost always exalted, where the sympathies are rapid, active, and multiplied; a cerebral system constantly kept in a state of permanent erethism by extra-normal and disturbing excitations. The next predisposing cause is the deficiency, or, at least, the progressive diminution of contractility; so that the individual loses the power of re-action, that is, the faculty of effectually repelling or neutralising the injurious action of several modifying agents. This, he says, is the fundamental character of this constitution, as has been already shown.

The third predisposing cause of disease in persons of this constitution is the unequal distribution of the vital and sensitive forces. If in such individuals some of the organs are in a state of perpetual action, other organs are condemned to a state of almost absolute inactivity. The hurried and abnormal action of innervation further presents a character of irregularity which is opposed to the equilibrium of the vital acts. The portion of nervous power which appertains to the functions of digestion, nutrition, circulation, &c. is for the most part directed to the mind, and to its organ, the brain. Some organs have a superfluous supply, while others do not receive enough; whence the organic relations necessary for the maintenance of health are actually destroyed. We next come to consider the—

External or Secondary Causes.—And the first stated is *sedentary life*—the second, *the want of pure air*—third, *prolonged and repeated watchings*—fourth, *certain positions or postures* of the body when at study—fifth, *the retention of urine and of the fæces*—sixth, *errors in diet*—seventh, *solitude*—eighth, *eccentric habits*. The influence of the first of these causes in the production of bad health is universally acknowledged—nor will that of the second, viz. the want of fresh air frequently renewed, be denied by many. The author here ridicules the poet who attempts to sing the beauties of Nature and the delights of rural life, while he at the same time inhabits some dirty narrow street or court from whence he scarcely ever emerges—and the painter, who attempts to paint *Aurora opening with roseate fingers the portals of the East*, though he scarcely ever sees the sun rise for whole

months together. The mischievous effects of prolonged and repeated watching will scarcely be questioned. It, on the one hand, deprives the body of rest, over-excites the brain's action, augments the enormous wasting of the nervous principle, occasions sanguineous congestion in the head; and, on the other hand, it prevents the due reparation of the vital powers, or at least causes such reparation to be imperfect. The brain is so excited on such occasions, that oftentimes, when the exhausted thinker gives up his study and retires to rest, sleep flies his eyelids; the excitement still continues, and repose comes not. The state of cerebral tension, so desirable for the production and combination of ideas, still continues, notwithstanding all his efforts to diminish it; and, should sleep come at length, it is restless and disturbed, and recruits but imperfectly the exhausted strength. With respect to the position usually assumed by sedentary persons when at study, we may remark that, besides the curvature of the spine so often observable in such persons, such position interferes very much with the circulation of the blood, favours abdominal congestions, compresses the liver and stomach, and injures the functions of these organs. When the head is deeply involved and occupied in meditation, the other organs in vain appeal to the brain, to apprise it of their condition and warn it of their wants; the sensation is either wholly absent, or very slight. The brain is at work, the ideas flow on, the pen runs rapidly over the paper, and the individual defers to another time the business of eating, drinking, emptying the bowels, &c. What is the result of this? Debility of stomach, pulmonary congestions, catarrh and calculi of the bladder, obstinate constipation, &c.; in a word, a crowd of diseases depending on the individual constitution. The errors and deviations in diet to which literary men are occasionally liable; the alternate privations and excesses endured and indulged in by them, are well known. On this we shall only remark that, what is moderation in an ordinary man of the world, becomes excess in the man of study, whose extreme organic sensibility requires the strictest care. With respect to the next cause, scil. *solitude*, it is well known what charms this has for studious persons, charms to which people of the world are downright strangers. There is, however, considerable caution necessary to guard against the effect of this indulgence. The perpetual convergence of the vital movements towards the head, the uninterrupted activity of the brain, that force of thought, and series of ideas, reasonings, and inductions, which keep the brain in, as it were, a constant state of erection, distress, and harass beyond measure the springs of the œconomy. To sacrifice the flesh to the spirit may no doubt be good for fame, but it is always ruin to health. External impressions or distinctions have, on the contrary, the effect of preventing the mischievous effects of too long-continued solitude: they interrupt those disastrous concentrations of mind, distribute the vital forces equally, and impart to the circulation a uniform motion.

With respect to *eccentric habits* as a cause of disease, he cites several instances of literary men, who paid the forfeit of health and life for their indulgence in them. One of the instances, Bourdelin, an eminent physician, was so carried away by the allurements of study, that, wishing to devote a portion of the night to it, he gorged himself with coffee during the day, and then took opium, when he wished to have some sleep. The consequence was, a premature death. Among the other eccentricities of literary

men he mentions the inordinate use of snuff and tobacco. Other individuals have been known to plunge their feet into cold water for the purpose of determining a rush of blood to the head, and of thereby exciting the powers of the mind. It is well known that certain faculties of the mind, as memory, are much increased during delirium, the paroxysms of fever, and other affections which determine more blood than usual to the head. Intoxication has been found to increase the energy of the intellectual faculties, and to revive the memory. We believe it is Mr. Combe who mentions the case of a porter, who, in a state of drunkenness, left the parcel he was employed to carry at the wrong house, and when sober, could not recollect what he had done with it. The next time, however, he became drunk, he recollected perfectly where he had left it. The author of the "Confessions of an English Opium Eater," observes, "that wine, up to a certain point, rather tends to steady the intellect, and that a few glasses rather advantageously affected his own." This, of course, shows that whatever cause produces an increased afflux of blood to the head has the effect also of heightening the intellectual powers: it shows further, and more generally, that the varying states of the organization have a powerful influence on the intellectual and moral faculties. We must, however, remember that, to affect the mind beneficially, to increase its energy and render such energy permanent, it is indispensably necessary to give constant attention to the agents that act on the body, and to take care that they injure not the mind by too much excitement of the physical system, nor prevent the proper development of its powers by too little; for wine and all other stimuli, though they may for a while give increased energy to the intellect, ultimately depress and weaken it. In concluding this portion of our analysis we shall only remark, what indeed we have already said, that these secondary causes of disease in deep thinkers have but a relative influence, their intensity being directly proportioned to the physical powers of the individual on whom they act.

Our author next proceeds to consider the *organs more especially affected by excessive intellectual exertion*. If, he says, there be a positive fact in pathology, it is, that all the causes capable of producing irritation and inflammation, commence by exciting and increasing sensibility. This pathological principle we remember to have seen strikingly and most satisfactorily illustrated in Dr. Billing's work.* The propagation of nervous irritation is extremely remarkable in the sensitive constitution now under consideration. It is then on the nervous system, generally and primarily, that all the causes of disease act. Now, when this system has acquired an exclusive and unnatural predominance, when the economy is, as one may say, saturated with irritability, it is clear that all the organs which it pervades must be in a morbid state, that is, must be extremely disposed to pathological affections. This is precisely what takes place in several artists, men of letters, statesmen, &c. devoted to the engrossing and tyrannical occupations of the mind. There are, however, certain organs more especially disposed to the action of those causes, and to which the reader's attention is now called. And first,

* First Principles of Medicine, by A. Billing, M.D.

The Brain.—The indisputable supremacy of this organ is the same under all the modifications which the economy may undergo; it is in fact always the first power of organic association. But here this superiority, and the dangers consequent on it, are increased by the excessive activity to which the organ is subjected. It is certainly in the brain and in its acts, that we must seek the source of happiness, the instrument of the indescribable pleasures and inconceivable delights of those men who live solely by thought; unfortunately too, it is here we must seek the true *atrium mortis*, the origin of those evils to which they are exposed. If we but take into consideration the high importance of the functions of the brain, the extent of its relations, the energy and diversity of its sympathetic connexions, we shall no longer feel surprised at the number, the variety, or severity of those diseases which are occasioned by its extreme and incessant excitation. The integrity of its functions forms the basis of health; without such integrity all is wrong. It may here be observed, that there exist many, very many shades in the changes produced in the encephalon, shades oftentimes inappreciable; for we judge and recognize only the extreme cases. It may be readily conceived that incessant meditation and exertion of the mind, which stretch and strain the springs of thought, absorb life and devour it by little and little, constantly keeping the cerebral powers in a state of super-excitement, must ultimately determine an inflammatory *molimen*, or else a state of general debility, which is sure to produce serious changes in the organ.

Now these changes are sometimes slow, sometimes rapid. Latent irritations, slow chronic inflammations, partial congestions, softening of several points of the cerebral substance, frequently develop themselves only by equivocal symptoms of morbid excitement; as the evil advances, the accompanying phenomena clearly manifest the cause, but the time for remedying this state is now gone by. The circumstances of temperament, age, &c. obviously influence the cerebral changes which occur. Young persons are more liable to inflammations of the meninges; aged persons, in whom the venous plethora predominates, frequently suffer organic lesions, congestions, ruptures of the vessels of this viscus, ramollissement, &c. In all, however, the pathological affections of the brain are always of a particularly serious character, by reason of the intense and incessant excitements which this organ undergoes. The moral sensibility, also, as well as the physical apparatus, acquires an extraordinary increase of activity. If it be true that, in civilized men, the imagination centuples the causes and results of diseases, what must be the effect which this imagination produces in men who concentrate their existence in the exercise of the intellectual faculties! One of the principal effects of the continued tension of the brain is to weaken all the organs more or less dependent on it, by depriving them of a part of the nervous influx necessary to their action. How true that saying of the distinguished physician of Catherine de Medicis, Fernel:—*A capite fuit omne malum*.

The organ most exposed, perhaps, to this privation is the *stomach*: debility of the digestive system seems in a manner peculiar to illustrious men. Some have even gone to the ridiculous extent of estimating a man's genius by the state of his stomach. We must, however, acknowledge the truth or Tissot's assertion, that "the man who thinks most, digests worst, cæteris paribus, and that he who thinks least is the man who digests best." Daily

experience, and the history of distinguished men, afford abundant proofs of the truth of this assertion. Some, however, attribute this delicacy of stomach in profound thinkers to their sedentary life; that this may in part account for the phenomenon we admit; that it will not account for the matter perfectly, is evident from the good digestive powers possessed by women, artisans, and others who also lead sedentary lives.

Napoleon, whose astonishing activity of mind surprised his cotemporaries, had, on the contrary, a very susceptible and irritable stomach. Our author has already shewn, that when sensibility predominates, contractility diminishes; and this occurs more especially with respect to the digestive apparatus, the tonic and contractile power of which is not always proportioned to its sensibility; the consequence of this is, that the debility of the stomach now in question is always accompanied with nervous irritation of this organ. To this we may add, that the continued excitement of the brain has a direct and immediate influence on the stomach. It is well known that a strong exertion of mind, sudden news, agreeable or otherwise, at once disturbs digestion, suspends the appetite, and throws the digestive organs into an almost morbid state of languor, and as every thing is linked and connected in the system, such a state, being continued for a length of time, re-acts on the other organs. When the act of digestion is interfered with and retarded; when chyliification is tedious, or incomplete, it is evident that such imperfect elaboration of the chyle will introduce into the system nothing but impoverished blood, and that its nutrition will be essentially altered. The body then becomes weaker and weaker; the flesh becomes devoid of life; the tissues without consistence, whilst the sensibility increases in proportion, and the nervous irritability becomes more developed. Improve, however, the digestion, let the nutrition be made more perfect, and then the blood becomes pure and rich, the body soon becomes strengthened, the sensibility, both physical and moral, remains within due limits. Thus we see the sphere of the stomach's activity is very extended, independently of its connexions with the nervous plexuses surrounding it; whence it is that the epigastrium is one of the principal points of concentration of the vital influences. In this sense it was we are to suppose that Wepfer called this viscus *præses systematis nervosi*. Amatus, a Portuguese physician, it was, who said that a bad stomach follows profound thinkers as faithfully as the shadow follows the body.

Next to the stomach, our author sets down the *liver* as one of the organs most frequently modified in its functions, and even in its structure, in men of studious, and sedentary habits. The predominating venous plethora existing in the abdomen, the complicated structure of this viscus, as ascertained by the recent valuable researches of Kiernan, researches by the way not tending to gratify mere anatomical curiosity, but calculated to afford sound practical indications in treating the diseases of this viscus, the close sympathies subsisting between this viscus and the stomach through the ganglionic system, its connexion also with the brain, all these considerations at once account for the frequency of lesions of this organ, its engorgements and tumefactions, its inflammations, sometimes of a slow, chronic character, and sometimes rapid and fatal. History tells us that the poet Racine died of an abscess of the liver which was neglected, or mistaken for some other affection. The importance of a healthy secretion of bile, depending as it does on a healthy state of this organ, is obvious. Another effect of hepatic

disturbance or disease, by interfering with the abdominal circulation, is hæmorrhoids, that scourge of studious and sedentary persons.

Next to the liver the *urinary organs* appear to be the part of the system most affected in literary persons—and next, the senses of *hearing* and of *sight*.

Our author, after enumerating the vital organs generally affected in studious men, next proceeds to enumerate the *diseases*, at least the principal diseases, to which these persons are liable. In this enumeration he follows the order of the different organs, and accordingly begins with *affections of the brain*. These, he remarks, sometimes come on rapidly, and explode, as in cerebral inflammations and brain fevers; whilst the effects of incessant mental toil are at other times slow. Apoplexy itself, to which so many profound thinkers fall victims, presents various modifications. Before the person gets the fatal stroke, how often has the brain been excited, strained, and outraged! how many times have *rushes* of blood to the head, squalls of heat in the face, dull pains and sense of weight in the frontal region, temporary dimness, violent arterial pulsations in the temporal region, and restless sleep, clearly indicated sanguineous repletion, and cerebral excitement beyond what was natural. These effects, however, pass away; they are forgotten; they return, and the delicate structure of the brain is soon broken up. The author here enumerates a list of distinguished men, great intellectual labourers, who fell victims to apoplexy; or some other disease of the brain. Among the rest he mentions Swift, Petrarch, Copernicus, Malpighi, Richardson, Spallanzani, Monge, Cabanis, Corvisart, and Sir Walter Scott. A slight attack of this affection has been called by *Ménage un brevet de retenue de mort*; that is, as we may render it, *Death's bond of security*. Napoleon, who dreaded apoplexy, one day asked Corvisart, his first physician, for some information respecting this disease. "Sire," replied Corvisart, "apoplexy is always dangerous, but it is preceded by certain symptoms. Nature seldom strikes the blow without giving warning. A first attack, which is almost always slight, is a *summons without costs* (*sommission sans frais*;) a second a *summons with costs* (— *avec frais*;) but a third, is an *execution on the person* (*prise de corps*.)" Corvisart himself afforded a melancholy proof of the truth of his assertion.

Our author thus endeavours to explain the gradual action of the causes of this disease. The permanent excitements of the brain at first increase its energy, or activity, in fact, its *vitality*. This excess of action, when repeated, occasions every time an afflux of blood to this organ; the stimulations then become congestional. At first these congestions disappear more or less completely, the brain is freed, and the equilibrium is restored. Afterwards the forced dilatations of the vessels become such that the congestions disappear but imperfectly; this gives rise to symptoms not, however, of a very very alarming nature. At a still later period, when age advances, and the venous system increases in size, and the cerebral veins have a tendency to become varicose, at the same time that the arteries diminish in diameter, these congestions become permanent. This state of engorgement increases rapidly, if there be aneurysm of the heart. From these morbid states arise coma, stupor, softening of the brain, tremors, paralysis, and, finally, apoplexy in all its degrees.

It sometimes happens, after prolonged study and watching, that the

action of the brain becomes totally suspended. The painful torpor of the nervous apparatus which is the result of this, renders the individual incapable of connecting two ideas, in fact, thought ceases altogether.

Now, while the vital action is thus extreme in the encephalon, the digestive apparatus becomes altogether languid. The abdominal circulation which is naturally not very active, especially in the branches of the vena portæ, so happily called by some one *porta malorum*, now becomes very much impeded. The afflux of arterial blood towards the upper parts of the body; the sedentary life, the habitual flexion of the trunk, so frequent among studious persons, contribute still more to increase the evil. During this time the stomach loses its contractile power, a distressing sensibility becomes developed in this viscus, and the digestive function becomes more and more impaired. When one becomes excessively attentive to his digestive powers, when the stomach is delicate, scrupulous, and requires some particular kind of food, when the appetite is irregular, when flatulence exists with sour eructations, a feeling of burning heat in the throat, swelling and heat in the epigastrium during the act of digestion, our precautions must be redoubled. It is certain that then the alimentary tube is threatening some serious disease, which sooner or later will explode. Inflammation of the liver and stomach, in all its stages, jaundice, gastralgia, spontaneous perforations, nervous colics, frequent vomiting, scirrhus pylorus, cancerous affections, &c. are the results of the morbid principle now under consideration. And, making the same observation here as when speaking of the brain, we find that slight diseases of the digestive apparatus, such as loss of appetite, painful digestion, flatulence, are shades of organic and functional changes which often lead to lesions no longer to be remedied by art. Though *constipation* is not, strictly speaking, a disease, it occurs so frequently in the class of persons we are now considering, it is the latent or obvious cause of so many diseases, that itself may well be considered one. Two causes produce it, heat and unnatural dryness of the intestinal canal, or else debility and atony of this same viscus. The latter cause is remarkable enough in aged persons. It would be superfluous to enumerate all the consequences produced by obstinate constipation. We shall mention merely the principal of them; these are, inflammation of the intestinal canal, degeneration of tissue, hæmorrhoids, fistula in ano, &c.

Calculi in the kidneys and bladder.—This is a frequent attendant on sedentary and studious persons—Erasmus, Luther, Bossuet, Buffon, were victims to this visitation. *Hypochondriasis—melancholy—monomania, cum multis aliis*, may be added to the list.

We have now presented our readers with an analysis of the physiological and pathological parts of this certainly extraordinary work. Many of our author's views are novel; many of them are interesting, and perhaps truth will oblige us to say, some of them border very closely on what our German friends would call the transcendental philosophy. In our sketch we have endeavoured to present the author's opinions in as tangible and matter-of-fact a form as we could, though we fear much we have not been as successful in our efforts to materialise and give a body to the abstractions of his mind, as he has been in giving a soul to what ordinary men would consider the objects of mere sense. The English reader, however, accustomed as he is to plain, common-sense facts and reasonings, when he finds any thing

here not very intelligible, must be content to take *omne ignotum pro mag-nifico*, or must do as the school-master mentioned by Quintilian, who, when-ever he found any thing unintelligible in the literary compositions of his scholars, encouragingly exclaimed, *tanto melius, ipse non intelligo!* With the therapeutical part of the work we must decline meddling; all that is good in it we have ourselves, and with the rest we can very well dispense.

SPINAL DISEASES: WITH AN IMPROVED PLAN OF TREATMENT.
Including what are commonly called NERVOUS COMPLAINTS,
and numerous Examples from upwards of 150 Cases. By
John Hey Robertson, M.D. Octavo, pp. 160. Glasgow and
London. 1841.

THE object of this volume is confined to three classes of spinal affections. **POTT'S MALADY**, disease of the spinal bones, ending in pressure on the spinal cord, with or without paralysis of the parts below. 2d. Lateral or serpentine curvature. 3d. Disordered condition of the spinal nerves. This last is the most common of all, and is often dependent on the lateral or angular curvature; but frequently idiopathic. It is unnecessary for us to take any notice of the anatomy, symptoms, or pathology of the first two classes of spinal affection. The third, or functional derangement of the spinal nerves occupies chiefly our author's attention. He dislikes the term "spinal irritation," as conveying no very definite meaning to his mind. He seems to think that, in all cases, there is some change of structure, though the eye or the scalpel be unable to detect it.

"Disordered action may be going on in some distant part, and this propagated up the course of the nerve, and being long-continued, may induce a condition of the nerve which will again produce or keep up this disordered action, no alteration all the while taking place in its physical condition. This I can conceive, but am of opinion, that it is far more likely, that long-continued derangement at the extremity of a nerve will end in producing actual alteration of structure in the nerve, although it may be to an extent that the eye, assisted by the knife, cannot, in our present state of knowledge, detect, or even comprehend.

In other cases again, where the mischief originates in the nerve or its coats, and is propagated to its extremity, it is highly probable, that it is induced by some change in the nerve itself, or its sheath, amounting to a degree of sub-acute inflammation. This I am also led to believe, from the facility with which the disease can be removed.

Again, in by far the great majority of those cases, the complaint is brought on by actual pressure upon a spinal nerve. Long-continued position, by keeping the column bent one way, presses unduly on the nerve, produces pain at its extremity, and by-and-by in its course. This pressure upon one part of a nerve, will act as pressure does in any other part of the body,—interrupt the natural action of the nerve, gall and irritate, until it become inflamed, remaining so until the cause be removed, and the effects produced subdued by the usual means.

When the spine has been allowed to recover its proper position, and no actual

permanent curvature has taken place, the pain and distress produced by pressure on some of the nerves very frequently remains,—the mere removal of the cause has not been followed by the cessation of the effects; another analogical evidence that inflammatory action, or something approaching to it, has been induced in the nerve, or its sheath. Were there no other effect produced than mere interruption to the passage of the nervous fluid, the nerve should be restored to its original or sound condition on the removal of the pressure." 23.

The cure of lateral curvature must necessarily be slow; but the effects of pressure on the nerves, Dr. R. has always been able to relieve with certainty and celerity.

The third chapter of the work is dedicated to the symptomatology of spinal disorder, whether it consists in "disturbed action," irritation, or inflammation. The symptoms are numerous, and often of the most opposite kind. There is usually pain or numbness in some part of the chest or back, often about the sternum—*nervousness*—head-aches—sensation of weight or dragging, in the neck, back, or shoulders—a feeling of pricking or tingling in the limbs. Sometimes there is a sense of coldness—there is a sense of *sleeping* in the arms and legs—occasional coldness in the back, shoulders, neck, or head—oppressed breathing—tightness across the chest—palpitation—weakness of back—inability to walk far—or to sit upright or to either side, without pain. Pressure on the spine, with or without a hot sponge, will generally occasion some pain or tenderness. Cough, and pain in the chest, are not unusual, and sometimes raise apprehensions of phthisis.

"Partial or occasional blindness, or irritability of the eyes to light. Inability to lie on one side, or to bend to one side, without severe pain. Eructations, with irritability of the stomach, and vomiting.

Irritability of the bladder, with nephritic or gravelly pains stretching down the thighs. Constipation, and pains in the bowels. Pain in the right side, in the region of the liver, and also of the stomach.

Those functions peculiar to females frequently absent, or very irregular, and usually attended with severe pains in the lower part of the back. Limbs puffy, or swollen. Colour of the skin bad, generally dead white, or slightly tending to a faint yellow.

There is sometimes numbness, dulness, or paralysis of a part; sometimes the patient trips or stumbles on attempting to walk. There may be curvature, or projection of some part of the spine." 27.

The foregoing symptoms will not all appear in any case, but some of them in all cases.

CHAP. IV. is on the causes of these spinal affections. *Position* at school, or under tuition at home, is a fertile cause among the wealthier classes of society—and is a severe tax on opulence. The over-exertion of the brain, in modern education, is still more injurious than awkward or long-continued bad posture. In fact, the causes are numerous which lead to modern spinal affections, and many of them are totally beyond our cognizance. Among the middle and lower classes of society, the causes are equally numerous, though often of a diametrically opposite kind.

We must pass over several chapters of the work which, although they convey useful hints to the non-medical public, add nothing to the informa-

tion of the professional reader. The tenth chapter opens the subject of treatment. The following passage contains the pith of the chapter.

"A patient may have imperfect or diseased action of the Spinal nerves, either with or without lateral or serpentine curvature of the spine.

There is very little difference in the mode of relief, in the first instance, in either case. The distressing symptoms produced in curvature by pressure upon the spinal nerves, are quite capable of being relieved, without waiting for the removal, or even alleviation of the curvature. As the bend is usually gradual, mere curvature would produce no inconvenience to the patient beyond personal deformity, were it not for the injury done to the spinal nerves.

I do not know that the means I have been in the habit of adopting with so much advantage, in the treatment of these affections, differ much from those in use by the profession, except, perhaps, in the time and *mode* of employing them.

Cupping, particularly what is called 'Dry Cupping,' from there being no knife used, nor blood drawn, leeches, blistering, acupuncture, friction,—simple and medicated,—properly directed exercises, and sometimes a bandage of the simplest construction, comprise about the entire of my treatment, employed and varied, of course, according to the circumstances of each case. I have now and then been compelled to have recourse to a small eschar, not in simple disturbed function of the spinal nerves, but where this was complicated with deep-seated disease, involving alteration in the structure of the parts. An issue in mere curvature, whether to remedy the curve, or the inconveniences produced by it, is the very height of folly; and yet I have more than once met with patients who had them. Issues cannot be of the slightest service to the curvature, and are not at all necessary for the symptoms induced by it." 69.

It is evident that, among these remedies, "dry-cupping" is the heroic one—and its heroism appears to depend chiefly on the manner, the sleight of hand, with which the operation is performed. Dr. R. seems to unite the "*suaviter in modo*" with the "*fortiter in re*," for he assures us that, while he is enabled to draw up the integuments so as almost to half-fill the cup, the accompanying sensation is absolutely pleasurable.* The preference which he gives to dry-cupping over the scarificator is founded on several considerations—the chief of which is the saving of blood, where the individual is weakly, which is too often the case.

The mode in which Dr. R. applies the cups is not materially different from the method used some 40 or 50 years ago.

"A little piece of folded absorbent paper is dipped into alcohol—brandy, or pyroxilic spirit, keeping the end by which you hold the paper dry. Apply this to the flame of a candle, and let it drop to the bottom of the glass to be used. Turpentine does very well, but has the inconvenience of producing much smoke when burned. The dry portion of the paper adheres to the wetted or damp bottom of the glass, and when the latter is inverted and applied to the skin, the flame remains at the point farthest from the skin, and causes no irritation from its presence. The cup adheres instantly, and may be removed easily by inserting the finger-nail under its edge, to permit the access of air. The process of merely rarefying the air by the torch, in the way done by professed cuppers, is excellent when blood is to be obtained, but besides, to be well done requiring a degree of manual dexterity not likely to be possessed in general by members of the profession, does not, even when done in the best manner, produce an

* "It is borne with the strongest expressions of pleasure."

effect powerful enough for my purpose in dry-cupping. Their way might now and then be adopted, especially if the patient were very thin, or the part one upon which a glass of the proper shape could not easily sit. The method described, though not perhaps the most elegant, is by far the most powerful way of producing sudden determination towards the surface, and alteration of the internal action of a part. I can, in almost any instance, in a favourable part of the body, fill the glass or tumbler nigh half-full of integument and muscle, and in a few instances, have seen the blood sweat through the pores of a healthy but fine skin. Large glasses are to be preferred to small where they can be used; besides being more valuable as remedial agents, they are much less inconvenient to the patient. On the chest, back, belly, or hip, where the cups have plenty of space, two or more should be put on at once, and of a size much larger than those in common use." 73.

We have long thought that dry-cupping, and counter-irritation generally, have been too much neglected in this country, where polypharmacy has been nurtured by the vile mode of remuneration by bill of drugs, like the attorney's "bill of costs."

Dr. R. does not use the common glasses—and his are of such a size as to hold from six to sixteen ounces of blood; but, "instead of the usual plain round mouths, similar to that of a tumbler or wine-glass, I have it cut out at the sides, so as to make the *mouth* of the glass a segment, more or less small, of a large circle, both sides being alike." Dr. R. considers this a great improvement, as it enables him to apply the glasses to various localities where the plain and circular cups could not be adapted. Instead of strong and expensive glasses, Dr. R. gets a few strong tumblers, of different sizes, which are shaped under his eye by the glass-cutter.

"When properly done, I have a high opinion of acupuncture, and shall give one or two, *out of a number* of cases in which it was successful. It seems most useful in those instances where the pain (without curvature,) *shifts from one part of the back to another*. How it acts it is difficult to say. Some suppose its action to be electric or galvanic, and this, for various reasons, is highly probable. On removing the needles, I have invariably observed that they were coloured deep blue, from the point upwards as far as they had been inserted, and even exhibited a degree of polarity." 85.

The work is illustrated by some 30 cases, of which we can only find room for one.

"Mrs. ———, aged twenty-four, married four years, and has one child; has been ill for five years, and complains of difficulty of breathing, so bad as to make her unable to speak, until she has rested, after having walked but a very short distance; severe beating of the heart; general weakness, great degree of nervousness; pain in the breast; severe leucorrhœa; digestion bad; bowels constipated; has been under treatment for a long time, and latterly at the sea-coast, by advice of her medical attendant.

On examining, find she is wearing a pair of steel corsets, of great strength and weight, which press upon and gall the parts under the left arm-pit, and about the right shoulder-blade. She has worn them for three years. I found she had lateral curvature towards the right side, between the shoulders, and reversed below in the loins. Her right shoulder is about two inches higher up than her left, and it was for this, she says, she was ordered the steel corsets, viz. 'to keep her left shoulder up;' hence they were made to fit pretty well up to her left arm-pit. On inquiring carefully into the progress of her complaint, particularly the elevation of one shoulder, and depression of the other; it was

admitted, that during that time, and wearing those cumbrous contrivances that were to 'keep her left shoulder up,' she has been getting constantly worse. The curvature, so far from diminishing, or even remaining stationary, has been steadily increasing. She has been ailing all the while, and now is compelled to apply for relief from the consequences.

The 2d, 3d, 6th, and 12th dorsal vertebræ, I found very painful to pressure, over the spinous processes, but could not discover pain at the sides, viz. over transverse processes.

The dry cups were applied to the places, and small oiled blisters thereafter. *Liquor Potassæ*, and *Ammoniated Tincture of Valerian*, internally twice a day.

18th *August*.—It is just a week to-day since I last saw her, and the difficulty of breathing, increased action of heart, pain in the breast, and feeling of weakness, are all relieved; bowels still constipated; find the 6th dorsal vertebræ still slightly sore to pressure, and a feeling of pain is complained of in lower part of neck, when she leans forward to read. Applied the dry cups to the spot on neck, and to 6th dorsal vertebra. Opening medicine.

27th *August*.—Difficulty of breathing, and beating of heart, still more diminished; pain of neck gone; bowels yet disposed to constipation; advised moderate use of light dumb-bells, and medicated friction to back.

4th *September*.—Has been to the country for the last eight days, but does not think herself any better in consequence; re-examined back, and found 2d, 3d, 11th, and 12th dorsal vertebræ slightly painful to pressure, over spinous processes; re-applied the larger cups repeatedly, and placed small blisters on these parts. Continue *Ammoniated Tincture of Valerian*.

17th *September*.—Much better, but has caught cold, and has cough and expectoration. Inhalation, and a cough mixture, quickly removed these. The *Leucorrhœa* was first relieved, and then altogether removed, by astringent washes, and the use of the precipitated carbonate of iron, made by double decomposition at the moment it was to be used, the materials being given to the patient in separate phials.

25th *October*.—Has no cough now; to-day walked some miles from the country to see me; felt a little fatigued merely, and says that when she first consulted me, two months ago, she could not walk any distance, however short, without the greatest distress.

Back all sound to pressure, except on 2d and 3d dorsal; used two dry cups, and a blister, to be put on at bed-time, the size of a penny-piece.

She has been so well since, as not to have required any treatment. She has left off the use of her absurd steel machine, and taken my simple light bandage in its stead." 104.

Dr. Robertson's work is essentially popular, and not, we imagine, designed at all for the profession. We have, therefore, taken as long a notice of it as could reasonably be expected, and we have no doubt that it will prove very useful in the channels through which it will chiefly circulate.

MALTA: CONSIDERED WITH REFERENCE TO ITS ELIGIBILITY AS A PLACE OF RESIDENCE FOR INVALIDS. Addressed to the Members of the Medical Profession. By Francis Sankey, M.D.

Finer impressions, especially if strong, and on young minds, are rarely extinguished.
No. LXVIII. D D

punged by those of later years, however erroneous may be the first, or correct the subsequent ones. This may be the case in respect to writers on Malta. Byron designated it as a "MILITARY HORHOUSE," probably under the influence of momentary spleen or misanthropy. Hennen, the sober and philosophic topographer—our old and esteemed friend—was not more than mortal, and had his prejudices and predilections, when he wrote about "the implacable heat;" and "the showers of mud" in the Island of Malta. In respect to temperature, the highest range of the thermometer in the two hottest months, July and August, is 82° , whilst in the eight months that include October and May, the range is from 53° to 70° .

The island lies nearly in the centre of the Mediterranean, and almost within sight of Sicily. Although certain winds (the Siroc) are occasionally uncomfortable, in the Summer months, their inconvenience has been greatly exaggerated. The surface of the island is undulating, and does not present any hills higher than 600 feet above the level of the sea. There are neither woods nor marshes, and the orange and lemon plantations are enclosed within garden walls. The population is about 120,000 including the military. Valetta is a regular town, with wide and straight streets, crossing each other at right angles, and built on a small peninsula. The houses are commodious, the rooms large and lofty, provisions plentiful, and cheaper than in England. The inns are good and numerous. The thermometer does not vary more than four or five degrees during the twenty-four hours, from the end of September till the end of May, during which period the temperature is delightful—a complete Spring reigns in the Island. In February and March there are severe gusts of wind, which sweep freely over the Island; but are destitute of the keen cutting breezes that descend from the Alps or Appennines. The heat of the Summer, too, is moderated by cooling currents of air from the ocean, unobstructed by hills or forests. The effects of the Sirocco have been ridiculously magnified by Byron, and all who have written since his time. To it the fanciful ascribe all their morbid feelings; and the imprudent find a ready excuse for their indiscretions in the Siroc. In August and September this wind is often disagreeable, coming, as it does, both hot and humid from the south-east. In Africa it is a dry and hot wind, but becomes impregnated with moisture in its passage over the ocean. It seldom blows for more than a day, at one time, and in nervous people, causes languor and depression. In the Winter it is soft and balmy, and favourable to invalids with dry cough and bronchial irritation. The "showers of mud," described by Dr. Hennen, are merely the dust, which is sometimes rolled along by the wind, and which is occasionally united with aqueous moisture, as on the road-sides in England. The slight sources of malaria in Dr. Hennen's time have been all dried up. There are no vegetable matters running into a state of decomposition, nor animal matters either.

It appears from Major Tulloch's statistical reports, that Malta is not so healthy as Great Britain.

"This report is based on the deaths occurring in an average population of one hundred thousand people, compared with the same number in England. It is not just to ground such a statement on the deaths alone. The proper basis of the calculation would be the number of the sick; for such is the difference between the two countries, that a simple affection, which, in England, would

be cared in a few days, is allowed by the natives to degenerate into serious disease. The people cannot pay for good medical attendance, and are averse to taking any sort of medicine. They have not the means of changing a scanty and unwholesome diet for more nourishing aliment. The people in the country eat the coarsest description of food, bad bread, crude vegetables, olives, and inferior kinds of salt fish. Meat they seldom touch, and wine only on festival days: and then perhaps to excess. The long fasting of forty-four days in Lent, in addition to the generally unhealthy course of diet, is another source of debility, and therefore, a predisposing cause of disease. From these circumstances, coupled with bad clothing and dirty habits, the people here have not sufficient stamina to support disease, so that, of an equal number of patients in England and Malta, a far greater proportion would recover in the former country. If due allowance be made for all the diseases which the inhabitants bring on, or continue on themselves, either by carelessness or necessity, there will not be found in the south of Europe a more healthy spot than this island. The mortality here, notwithstanding the causes above stated, cannot, in ordinary years, be calculated at so much as three per cent. The average number of deaths annually, according to the Statistical Report, for thirteen years, is 2,577, which, on an average population of 100,270, amounts to rather more than two and-a-half per cent." 13.

There is another error under the head of pectoral complaints. The Maltese practitioners apply the term consumption to "any and every wasting of the body from whatever cause it may arise;" even including the natural decay of old age. All surgical affections terminating by suppuration or hectic fever, are also classed under the head of phthisis! Thus the wife of a judge received a severe burn, and died of its effects. The case was returned consumption. It is stated that there is a greater mortality among the same number of troops in Malta than in England. This, however, may be attributed to other causes than climate alone. The facility of intoxication, and the propensity to that vice among soldiers and sailors, must greatly increase the mortality. The Fencible regiment of Maltese shews only a mortality of little more than one per cent. per annum, and this low degree can only be accounted for by the sober habits of the native soldiers. Civilians do not suffer near so much on the Island as the troops.

"I do not, of course, pretend to affirm, that the climate and air of Malta possess any curative virtue for those persons, whose organic diseases have placed them beyond the power of recovery elsewhere. Where tubercular disease has proceeded so far as to make extensive ravages in the pulmonary tissue, it is ever useless and cruel to send such unhappy persons far from their homes and sympathizing friends, to die among strangers in a foreign land."

At the present day it is pretty generally understood by medical practitioners, that such removal is mischievous, both from the fatigue attending the journey, and chiefly that the change to a warmer latitude, by increasing the irritability of the hectic sufferer, and augmenting the nocturnal perspirations, would farther reduce the strength of the patient, and hasten the catastrophe. Yet sometimes the medical attendant trusts that disease has not committed the ravages he suspects, or he is induced to yield to the wishes and solicitations of the patient, whose hope of recovery often appears commensurate with the fatal tendency of his complaint.

But to persons who are suffering from constitutional debility, who, either from conformation or accidental circumstances, are strongly predisposed to pulmonary disease, or are in any state of cachexia, unattended with considerable organic lesion, a residence in a southern latitude, for three or four months dur-

ing the Winter is highly useful; and I think Malta offers advantages to such persons, equal to those of any other place; amongst those advantages we may enumerate,—the voyage by sea, when land travelling would be too fatiguing: the facility of conveyance from any part of the surrounding Continents; the novelty of the scene, so different from any thing which Europe can offer: the living under the British flag, in a British possession: the many comforts that may be commanded: the power of obtaining the assistance of English medical practitioner residents in the island, as well as those of the staff of the army, or navy: and a climate where, on every day of the year, for some hours of that day, exercise in the open air, or gentle boat exercise, may be taken, so essential to the re-establishment of health." 20.

One other advantage is the facility of removal from Malta, should the climate disagree. Almost every year there are steamers leaving Malta for England, France, Italy, &c.

"The residence of her majesty the Queen Dowager Adelaide, during the Winter of 1838-9, has tended greatly to give a deserved notoriety to this island; and her liberality has added a handsome church to its public buildings." 21.

Upon the whole, we think it not improbable that Malta will become a rather favourable Winter asylum for English invalids. In the Summer, they can easily land at Genoa or Nice—skirt the Italian lakes—cross the Alps—traverse Switzerland—and descend the Rhine to their native soil.

MEDICAL AND PHYSIOLOGICAL COMMENTARIES. By *Martyn Paine*, M.D. A.M. 2 vols. 8vo. New York. London, 1840.

To sit down for the purpose of reviewing a work consisting of two closely printed octavo volumes, containing about sixteen hundred pages, requires no small degree of moral courage. But when the contents are devoted to the consideration of the most abstruse, metaphysical, pathological, and physiological subjects; every page abounding with references to, or quotations from, authors of every age, and of every country, the difficulty is greatly increased; and we approach the subject, if not with fear and trembling, at least rather as a task than as a pleasure. Such is the character of the work now before us: and it certainly is a favourable specimen of the laborious research and elaborate study of the writer. It reminds us of the German school of authorship: or of such books in our own language as Burton's *Anatomy of Melancholy*; and puts to shame those medical authors who favor the world with the results of their experience, observation, and acquirements, without indicating always the sources, whence they have derived their knowledge.

For our own parts, however, we candidly confess that we have a predilection for this latter class of writers: we are practical men, and we heartily subscribe to the maxim Dr. Paine appears to quote with approbation, "*Ars medica tota observationibus.*"

We cannot, however, compliment him on adhering to his text, or carry-

ing out the precept there laid down. His work, indeed, savours much more of the lamp than of the dissecting-room; and of the study rather than the bedside of the sick. It will be a lasting monument of the author's profound and multifarious reading; and if a man have patience to wade through his pages, it will enable him to talk, and to dispute, on medical and physiological subjects; but we much question whether it will advance his knowledge as a practical man, or increase his perceptive powers in the detection and treatment of disease.

The opinion Lord Byron had of the Book to which we have above alluded as a literary work, coincides exactly with our own, respecting this as a medical one. "Burton's Anatomy of Melancholy," said he, "is the most useful book for a man who wishes to acquire the reputation of being well read with the least trouble. But among the medley of quotations the superficial reader must take care, or his intricacies will bewilder him. If, however, he has the patience to go through his volumes, he will be more improved for literary conversation than by the perusal of any twenty books with which I am acquainted: at least in the English language."

In attempting an analysis of Dr. Paine's work, it will be in vain for us, among the contrariety of opinions and doctrines brought forward, to give more than a summary of his own views: indeed to do this will often be no easy task. His style is so verbose, and so interlarded with quotations, that it becomes bewildering, and we are frequently at a loss to know his meaning. We shall endeavour, however, to lay before our readers such brief practical comments and reflections, as a careful perusal has left on our minds, and by this means we trust we shall do good service to many, who, like ourselves, have but little leisure for the discussion of these recondite and speculative opinions. Indeed, we apprehend that elaborate works of this kind meet with but few readers; and we fear that the circulation of Dr. Paine's book will but ill repay the labour bestowed on its compilation. The taste of the age (in this country at least) is against them: besides, men in actual practice have no leisure for the perusal of abstract and controversial subjects, and the time of students may commonly be better employed, in anatomical and experimental researches, and in clinical observations. We do not make these observations from any disrespect to the author; or with any wish to detract from his great research, and peculiar merits; but they are in accordance with our own views, for we have been accustomed in our studies to follow the advice of that most accurate observer, Baglivi, whose writings are a perfect model both to imitate and to follow.

"In lectione librorum nunquam proficies, nisi prius in legendo methodum tibi comparaveris. Lectio librorum tumultuaria, inconsiderata & inexplibili quadam aviditate facta, mentem hebetat. Commoda, considerata & Doctorum virorum conversatione, atque experimentorum usu conjuncta, eandem sæcundat ac perficit. Et sicuti nimia ciborum ingurgitatio salubriorum valetudinem non affert, ita nec inexplibilis librorum lectio solidiorem doctrinam."*

The first section is devoted to the consideration of the vital powers. The author after criticising the definitions of Bichat, Lawrence, Müller, &c. &c.

* Baglivi, *Prax. Med.* Caput 7. De Præpostera librorum lectione.

propounds his own views, which, so far as we are able to collect them, are the following. Matter is endowed with certain "vital forces," distinct from its essence—which govern its phenomena, and which are susceptible of impressions from certain stimuli.

These stimuli are the remote causes of vital actions—whilst the "vital forces" in connexion with the organised matter, are the immediate source of the phenomena.

What is life? Life, philosophically considered, is a cause, and productive of results which constitute life in a popular sense. The functions are merely the results of the vital forces operating upon organised matter and called into action by certain stimuli. Life, therefore, virtually consists in the co-existence of these forces and a peculiar substratum. The soul exists in the fœtus; but like the senses is not displayed until certain external causes call its existence into activity. The resistance of the egg and seed to putrefaction, depends upon the presence of the "forces of life;" their activity, or growth, is produced by the peculiar stimuli acting on those forces. The elements of organisation are held in combination by the action of the vital forces, on the withdrawal of which they separate into their ultimate elements.

The conclusions he draws are—that life consists in the integrity of the vital forces associated with organised matter—that the vital actions are only the results of the foregoing conditions—that the vital properties are essentially distinct from organised matter itself, or any chemical or physical agency;—and that organic structure may exist entire without the properties of life—though the former is necessary to the existence of the latter.

In the second section the author treats with great severity the opinions of those philosophers who attempt to explain the phenomena of life on chemical or other analogous principles, and whom he terms the chemical physiologists. In a strain of irony, and in a spirit of unfair criticism, he reviews their writings, and by means of garbled and insulated extracts—by confounding them with their own conflicting opinions—and by not unfrequently misapprehending or mis-stating their views—he soon demolishes the doctrines (or, according to Dr. Paine, chimeras,) of such small fry as Prout, Philip, Davy, Bostock, Elliotson, Müller, et id genus omne. After thus laying prostrate names which we, in our simplicity, have almost held sacred in this department of science, we naturally expected to be enlightened by our author's own views, but, alas! we are left still in the dark.

We have the perpetual repetition of "vital forces," "vital powers," "properties," and such terms; but what do they explain, or to what practical purpose do they lead? They tend, in our opinion, to mislead, and to mystify, rather than to enlighten; and will be just as useful to physiology, as the researches of Sir Isaac Newton would have been to astronomy, had his powerful mind been employed in discovering the causes of gravitation instead of investigating its laws.

No one, we apprehend, doubts the existence of "vital forces," "properties," or something inherent in living beings, totally distinct from chemistry, galvanism, or other analogous powers, and which can neither be produced nor imitated by any of these agencies. But in a secondary and

practical point of view, there is no doubt, that many of the processes of life may be modified by chemical and mechanical causes—and consequently these sciences frequently lend their aid, not only in the explanation, but also in the treatment of various diseases and malformations incident to living beings.

The third section is occupied partly in defining the essence of life, and partly in criticising the opinions and definitions of others.

"The essential principle of life," says our author, "is a simple substance, something analogous to, but distinct from, the soul itself, something intermediate betwixt spirit and matter, or in animals betwixt instinct and matter."

Assuming Scripture as a ground of argument, he says—

"It is manifest that man was completed in his structure without life before he became endowed with a soul, and that the act which created his soul bestowed also the vital forces. One appears to be as much a new creation, distinct from the forces of dead matter as the other. When man was already perfected in his structure, he was without life. But by the act of breathing into his nostrils, his peculiar physical life and his soul were simultaneously created, and such is their companionship whilst life continues, that some philosophers have considered them identical. And how perfectly in harmony is all this with the exit of man. His soul and the vital forces leave the corporeal frame simultaneously: nor will either be restored but by another act of creative energy." 88.

He then triumphantly shews that—

"The vital forces cannot be generated by matter, since upon them organisation depends: nor by the forces of physics, since these are perfectly incapable of restoring the structure, or even its elementary composition after the organised matter is decomposed, or of re-animating the machine after decomposition has begun." 92.

We need scarcely point out the incongruity of these passages: in the latter the author states that the vital forces are the *cause* of organization, whereas in the former it is shewn that man was *perfected* in his structure or organization *before* he was endowed with the vital forces: nor need we advert to the irreverent expression that "the soul will not be restored, but by another act of creative energy." We do not mean to insinuate that in this and similar passages, the author denies the immortality of the soul; but his language on this—the creation of man, and other sacred subjects, is so vague, and often so contradictory, that we fear doubts may be engendered in the minds of many of his readers.

Discrepancies of the kind to which we allude, may be found in almost every page of this Essay. For instance, in the passages we have quoted above, the author is compelled to have recourse to Divine agency for the creation of his vital forces; yet, in a note, he says that "the whole work of creation was miraculous, and therefore is not connected by any analogies with the subsequent processes of Nature;" and in page 10, he states—

"Some able writers have lately appeared, who, admitting that life consists of a certain series of phenomena peculiar to organised matter, and having endeavoured to explode the entire doctrine which regards the forces upon which those phenomena have been supposed to depend—have proceeded so far as to affirm that the Deity himself is the immediate cause of all the phenomena of Nature.

The latter construction has arisen, in part, from the irresistible conviction that actions of all kinds require a certain power for their development. With this class of reasoners it will be difficult to argue, since their doctrine is a matter of faith and not of reason. There is no common ground between us."

Again, page 86, he accuses Müller of materialism, "in part from speculating on a subject so far beyond all human comprehension as the endowment of a fœtus with a rational, immaterial and immortal soul." Whilst, in page 13, he argues on the same point himself.

"Since, therefore, the fœtus, or a new-born infant, has as much a soul as man, we argue, that if the child sees, hears, tastes, smells and feels, as soon as it enters the world—the properties on which those functions depend, had a full existence in the fœtal state at the time of its birth."

The conclusions Dr. Paine appears to draw from his reasonings on these speculative points are—1st. That life in its essential principle is a simple substance. 2dly. That it is distinct from all physical, chemical, or other forces, and that its phenomena cannot be induced or explained by them. And, 3rdly, that there is a sort of *tertium quid*, a middle matter termed sympathy, which forms the connecting link between the vital forces and organised matter, and which receives external impressions and communicates them to these vital forces.

The appendix is devoted to an examination of the theories of electricity, galvanism, &c. as to their being analogous to nervous influence, or in any way explaining its phenomena; which the author denies in toto, considering the nervous influence to depend on a cause quite independent of them.

The next essay is on the philosophy of blood-letting, and extends over 300 closely printed pages. We will endeavour to give a summary of the author's views; but we confess, amidst the obscurity which pervades his essay, we can neither discover his meaning in many parts, nor his object in writing it at all. He professes to detect errors in almost every writer on the subject, and the theory which he propounds is something like the following.

The first effect of blood-letting is a contraction of the bloodvessels; this is brought about not from its diminishing the quantity of blood, but from its action on the vital forces. In leeching the contraction commences in the extreme vessels, and is propagated by sympathy—by continuity, or by remote consent, along the whole chain of vessels to the heart. The peculiar efficacy of leeching seems also to depend on some specific impression on the *vires vitæ*, which no other mode of abstracting blood can exactly accomplish: and one of the advantages is the effect kept up on the vital forces of the capillaries, and thence conveyed to the vascular system at large: hence, no matter how far the leeches are applied from the affected parts, the impression is propagated to it by continuity or remote consent.

This doctrine of the vital forces, and the contraction of vessels, explains, the author thinks, some anomalies in blood-letting:—for instance, less effect is produced, he says, by depletion in phrenitis than in pneumonia, because the sympathy between vessels of the same order is so great, that when those in a state of inflammation, refuse to contract the whole series throughout the body is maintained in a correspondent state. In phrenitis—

"The contraction of the cerebral vessels is partly prevented by the peculiarly modified state of their vital powers, and in part by the tendency of that modification to prevent a contraction of the corresponding vessels in other parts. The peculiarity of this modification arises from the nervous influence which is exercised upon the vessels of the brain in a state of inflammation; and is thus distinguished from the condition of the vital forces which affects the small vessels when the seat of inflammation is in other parts." 166.

Syncope, according to our author's doctrine, is a complex phenomenon. It is induced by the powerful influence of the vital forces of the capillaries, and the consequent universal contraction of the vessels; occasioning an influx of blood to the heart, and thus embarrassing its action. There is also an impression on the brain, which is produced by a diminished supply of blood, and by the sympathetic re-action.

"If, however, moral causes produce syncope, the primary affection of the brain consists only in some specific impression on its properties; and that its functions are only suspended by the failure of the heart's action. We infer also that the influence of the brain upon the heart, so far from being 'diminished,' is actually increased. This modification of the cerebral powers is constantly mistaken, as it appears to us, for a failure of functions." 176.

Blood-letting, then, operates invariably through the medium of the vital forces; and its phenomena cannot be explained on any mechanical or other principle. This is the fundamental doctrine of the author. It would be useless to follow him through his prolix reasonings and details—his endless criticisms and quotations from other authors—and his perpetual complaints that their practice is warped and influenced by their theories. "*Mutato nomine de te fabula narratur.*"

His theory, as it appears to us, is mere assumption; unsupported either by experiments or facts. His reasonings, therefore, can be pertinently addressed to those only, who yield their assent to his assumption, nor will even they, we apprehend, generally admit his conclusions. But a controvertist trifles with his readers, when he grounds his arguments on the assumption of a theory which is denied by many, and doubted by more. Besides, to what practical purpose does this theory lead? it neither simplifies our knowledge of the powerful remedy it professes to explain, nor points out the cases proper for its adoption. It leaves, indeed, unanswered the very question with which he commences his enquiry. "How does blood-letting operate? How are diseased vessels unloaded, in some instances by the abstraction of small quantities of blood; when in other cases, under apparently the same circumstances, a great extent only of the remedy will effect the same results?" P. 121. Indeed nothing can shew the inconclusiveness as well as uselessness of his researches so clearly as his own admission.

"As to the assumption," says he, "of any particular symptom or circumstance as a rule for blood-letting, we hold it to be indefensible, and shall endeavour to prove it so in subsequent sections of this essay." P. 237.

We shall, however, best enable our readers to form their own opinion of the style and value of Dr. Paine's comments on other authors, and of his own practical information, by selecting a few of his criticisms on some of the more recent writers on blood-letting.

Dr. Wardrop says, "The leading symptom by which the constitutional

disturbance demanding venesection is indicated, will be found in the quality of the pulse."

Our author states, "There is scarcely any symptom, per se, that is less to be trusted to than the pulse, unless it possess certain positive characters." P. 233.

Again, page 237, "We think that very few will agree with Dr. Wardrop that 'there is usually no appearance of the buffy coat in blood removed from persons affected with violent inflammations, until the latter stage of the disease, and at the very period when the further abstraction of blood would be pernicious.'"*

"On the contrary, indeed," Dr. Paine says, "we find in 99 of 100 such cases, that the buffy coat is presented at the *first* bleeding and has disappeared more or less when the further abstraction of blood would be pernicious."

"Again," Dr. Wardrop says, "in almost every case where venesection is necessary, there is present along with the disturbed action of the arterial system some local pain more or less severe." "Now this," says our author, "is notoriously not the case in very many instances of venous congestion, in many chronic inflammations, and often in severe cases of pneumonia; in all of which blood-letting may be indispensable." P. 237.

Dr. Arnott states "that it is a great modern improvement in the practice of the healing art in bleeding for the cure of inflammation, to take away the blood *as quickly as possible*; since intense inflammations of the brain, lungs, bowels, &c. are equally removed by faintness, whether it happens after the loss of ten ounces of blood, or of fifty." "This," says our author, "is a fallacy."

This quotation from Dr. Arnott is from his *Elements of Physics*, p. 470. Dr. Paine adds, in a significant note—"Hence too, appears the fallacy of applying the '*Elements of Physics*' to considerations of this nature.

In the same ex cathedra style Dr. Paine criticises the opinions of other writers. He thus concludes his strictures on Dr. Marshall Hall. "But the *most exceptionable* part of Dr. Hall's rules, as it appears to us, applies to the repetition of blood-letting." "If much blood has flowed," says Dr. Hall, "before incipient syncope has been induced, re-visit your patient *soon* and you will probably have to repeat the blood-letting, in consequence of the severity of the disease; especially if you were not called in early in the first instance. If, on the contrary, *little* blood has flowed, *neither does the disease require*, nor would the patient *bear*, farther general depletion."

We have made these quotations, which we might extend to any length, partly to exhibit the style of Dr. Paine's criticisms, and partly to give greater currency to the valuable suggestions which he so strongly reprobates. As we write for practical men, we would appeal to them whether the opinions laid down in the quotations from the three eminent writers above-named, are not consonant with their own experience. For our own parts, we consider these and similar passages interspersed through the writings of such men as Hall, Wardrop, and, we may add, of Sydenham, Heberden, &c. to constitute their peculiar interest and value. It is by recording observations

* On Bloodletting, p. 41.

made at the bedside of the sick, and verifying them by experience, that the science of practical medicine is to be advanced; and not, in our humble judgment, by framing theories and then making our practice subservient to them. Facts and observations are our landmarks: for diseases and their symptoms remain the same, although the theories which profess to account for them change with almost every writer. We do not now read Cullen and Darwin to know their theories—but to know their facts and their practical inferences. Dr. Paine's theory may or may not be true, bleeding may operate *only* "by producing its direct effects upon the vires vitæ of the capillaries by modifying their action;" or it may operate in some other way; but we wish to know in what cases of disease bleeding is proper: and if proper, in what way blood should be abstracted. This our author's theory does not teach. It can only, indeed, be apprehended, be acquired by our own observation, aided by the recorded experience of others. He is consequently the best practitioner who is the most accurate observer, and who has sagacity to profit by and to arrange recorded facts. Had we, indeed, a theory founded upon nature, that should bind together the scattered facts of medical knowledge—and converge, as it were, into one point of view the laws of life, it would contribute much to the interests of medical science. But theories framed to explain the causes and nature of disease, and the *modus operandi* of medical agents, have advanced, and probably will advance, but little the practice of medicine. They may assist us to explain some physiological facts, or the phenomena of some diseases; but the successful treatment of them must mainly be learnt in the school of experience.

Dr. Paine's experience may have been extensive; but the perusal of his work leads us to the conclusion that his practice is founded on theory rather than on observation. In every section of his essay, while he displays both industry of research and dexterity of applying quotations and references; he has at the same time, through eagerness to establish his favorite position, called into his service a number of remarks, many of which are greatly overstrained in their application, and others if strictly examined will be found to disserve his cause. Through the same anxiety to follow up his theoretic views, he advances opinions in various parts of his essay which if put in practice would, we think, prove highly dangerous. In page 337, he says, "We hold it (bloodletting) to be more important in infancy, under equal circumstances, than at any other age; and this ratio increases as we ascend to the hour of birth." In page 361, among the aphorisms with which he concludes his essay is the following.

"Blood-letting is equally safe at all periods of life, but is *most indispensable* in old age."

Now, we submit, that if Dr. Paine's practice had been guided by experience instead of theory, he would not have come to conclusions, and have made unqualified assertions so fraught with danger.

We do not deny that cases may occur in extreme infancy as well as in extreme old age which require bleeding; but these instances are very rare, and when they do arise, the greatest caution must be observed.

The same recklessness in recommending blood-letting pervades the work. In all the modifications of scrofula, tubercular consumption, erysipelas, &c. bleeding is the sheet-anchor; and although the author, having no guide

but his theory, is occasionally at a loss whether he shall bleed or not; yet instead of giving the patient the benefit of the doubt—he says, page 238, “If, after surveying the whole aspect of a case, we remain in doubt about the propriety of abstracting blood, we generally take out our lancet and bleed the patient.” He then adds, “We every where see victim after victim sacrificed to timid admonitions and worse example; whilst you and all of us know that it is a rare phenomenon that a patient is slain, seldom injured by the lancet.”

We are apprehensive that these phenomena will henceforth become much less rare if the less “timid admonitions” of this work be implicitly followed.

The next and concluding essay of the volume is on the humoral pathology, and extends over nearly 400 pages. It consists almost entirely of criticisms, quotations and references.

The author, in pursuance of his own views, regards the phenomena of disease, its causes and treatment, as resulting from his doctrine of the vital forces: hence he exposes, and attempts to controvert the opinions of all writers, from Galen downwards, who advocate the humoral pathology.

It would be vain to attempt, and useless were it possible, to give a regular analysis of this elaborate essay. The endless criticisms of the author elicit no useful information; and he not unfrequently perverts the opinions of writers, and even distorts their facts, if they militate against his preconceived views. On the other hand, he arrays on his side of the question as solidists or vitalists, men whose writings cannot be so fairly interpreted; and many living writers, we apprehend, will be surprised to find themselves in such company.

For instance, he designates this Journal as “that stable solidist The Medico-Chirurgical Review;” and adds, “we consider Dr. Johnson himself in all respects a solidist.” Now we need only appeal to our readers, whether this Journal has not invariably advocated the opposite doctrine, indeed we could refer to fifty passages in proof of our assertion were it necessary. *Ex uno disce omnes.*

The question at issue, as the author fairly states it, is this—“Whether foreign morbid causes and remedial agents, in their ordinary modes of operation, produce their primary effects upon the solids or upon the blood, and the latter become the cause of disease in the former; whether we have hereditary humors, as gout, scrofula, &c. &c.” We are satisfied with the answer of M. Andral to this question. “Physiology,” says he, “leads us to the conclusion, that every alteration of the solids must be succeeded by an alteration of the blood: just as every modification of the blood must be succeeded by a modification of the solids. Viewed in this light, there is no longer any meaning in the disputes between the solidists and the humoralists.”

This view of the matter, however, does not satisfy Dr. Paine. He is an exclusive; and will have no modified or half-and-half doctrines. He is a confirmed solidist; and demolishes with unsparing criticism hosts of authors whom he quotes, whose views militate against his own.

The second volume commences with the “Philosophy of Animal Heat.” The author reviews the opinions of those writers who explain the phenomena of animal heat on chemical principles. He shews clearly, we think, that

there are many anomalies that cannot be accounted for on the theory that animal heat results from respiration, and the changes induced on the blood by that process. His own views on this subject may be deduced from the outline of his doctrine of the vital forces we have above attempted to explain.

"The power of generating animal heat relates to the vital forces and to nothing else." Heat is secreted or eliminated through the united agencies of these powers from the blood, in the same manner as the bile or gastric juice. This is certainly a very plain and simple statement of the matter. But there is no great novelty in it. Hunter maintained the same opinion.

"It is most probable," says he, "that the power of generating heat in animals, arises from a principle so connected with life, that it can and does act independently of circulation, sensation and volition; and is that power which preserves and regulates the internal machine."* We apprehend that writers subsequent to Hunter, who ingeniously attempt to explain the phenomena of animal heat on chemical principles, admit all that he or our author does on the necessity of a *primum mobile* or vital force. But as this vital principle usually makes use of chemical or mechanical agents for its purposes, we may, by investigating the laws of these agencies, be assisted in explaining some of the phenomena of animal heat, and in modifying or controlling its force when unduly or morbidly excited or diminished.

It will be unnecessary to detain our readers with any extended remarks on the subsequent essays of this volume. The same views and reasonings are made use of in all. In the next, "On the Philosophy of Digestion," the author states, that "the gastric juice is a substance, *sui generis*, endowed with vital powers—that it can only be generated by a living stomach—that it cannot be imitated by art; and that through its agency alone digestion is performed." These are truisms which few, in the present state of our knowledge, will be hardy enough to controvert; yet, as in the case of animal heat, some will be disposed to think that the function of digestion may be improved or impaired by chemical agencies; which, if we understand Dr. Paine, he utterly denies.†

According to him, medical philosophy, and its practical application, have nothing to hope for from chemistry.

The appendix to this essay contains some sensible and well written remarks in opposition to the theory of spontaneous generation.

The succeeding essay is a review of the various theories of inflammation. All are rejected by our author; and his own, the vital theory, considered the only true one.

The next essay is on "The Philosophy of Venous Congestion." It is most elaborate; occupying more than half the volume. As it consists, however, mainly of quotations and criticisms, we shall not attempt to analyse or abridge it.

Two essays on the "Comparative Merits of the Hippocratic and Anato-

* Hunter's Observations on Certain Parts of the Animal Economy, p. 91.

† For some interesting experiments on "Artificial Digestion," we beg to refer our readers to two essays by Professor Müller and Dr. Schwann, in the "Archiv. für Anatomie und Physiologie," for 1836.

mical Schools," and "On the Principal Writings of P. Ch. A. Louis, M.D." conclude the work.

In the brief sketch we have given of this very voluminous and erudite performance, we have endeavoured to lay before our readers the peculiar views and opinions of the author. Although we dissent from many of his conclusions—regret the paucity of his facts, and have been bewildered by his reasonings and arguments; (so much so as perhaps to lay ourselves under the imputation—"damnant quod non intelligunt,") yet we willingly award to him the merit of multifarious reading and research; and of untiring zeal in the support of his doctrines.

AN ACCOUNT OF THE NEW PROCESS FOR EMBALMING, AND OF PRESERVING ANATOMICAL PREPARATIONS, SPECIMENS OF NATURAL HISTORY, &c. Translated from the French of *M. Gannal*. By *R. Harlan*, M.D. Octavo, pp. 264. Philadelphia, 1840.

NEARLY one-half of the present volume is dedicated to an historical survey of the art of embalming among the ancients, especially the Egyptians, and more than half of the remainder is taken up with the modern processes employed for preserving the lifeless human frame, which ought to be consigned to the grave or the flames. Over both these portions of the book we shall pass entirely, as quite useless (the first particularly) in a practical point of view. What care we whether the Egyptians pitched and bandaged up the stinking carcases of their friends, to preserve them for forty thousand years, till the spirit returned to animate the black mummy—or because the soul kept possession of the clay for a thousand years after death—or because they were unable to bury the dead during the periods of inundation—or to secure the remains of their defunct relations from the voracity of animals—or from motives of filial or parental affection—or, finally, to furnish important remedies against dangerous diseases—a mummy being a sovereign cure for various maladies.

Whatever was the motive for embalming human bodies, the practice was absurd, as well as superstitious. If it became universal and continued for a million or two of years, the earth would be covered with mummies, instead of living beings! Sepulture, indeed, is only an inferior evil of the same kind. Burning the dead, and thus resolving at once the constituents of the cadaver into its original elements, is the most philosophic process, and that which would entail less mischief, as well as expense, on the living survivors.

We see that *M. Gannal* has reserved for his own profit the secret of embalming bodies so as to keep them in a state as nearly as possible resembling life. We quarrel not with him for this piece of charlatannerie, since he has disclosed the process for preserving anatomical preparations. This is all we want with the whole "art and mystery" of embalming.

M. Gannal's memoir was presented to the Institute on the 4th of March, 1838, and a commission was appointed to examine and test it.

Meantime M. Serres placed a corpse at M. Gannal's disposal in La Pitié, which he bathed in a tub containing two pails of alum, two of common salt, and one of nitrate of potash. The subject appeared to be well preserved, on repeated examinations. At the end of six weeks it was opened, when the flesh and viscera were found in a state of preservation. On the 12th November, 1834, M. Orfila placed two bodies under our author's management. These were bathed in a similar liquid at ten degrees.* On the 2d December the commission examined them, and they were consigned to dissection. On the same day another subject was injected with eight quarts of the saline solution at ten degrees. At the end of December these three subjects were examined, and found to be in good state of preservation; but it was remarked that the skin as well as the flesh had assumed slight appearances of decay, in respect to consistence and colour. The deep-seated organs remained nearly natural.

A commission named by the Academy examined these subjects, and demanded new experiments.

"Here it may be remarked that it required double the quantity of fatty matter for this, than for a fresh subject, and that the most delicate arterial net-work had been prepared by the injection.

These experiments, which lasted for half the month of May, satisfied me that an injection of ten or twelve degrees of density, and immersion of the body in a bath of the same liquid, will suffice for a preparation destined for ordinary anatomical purposes, and will allow of dissection after several months." 207.

The following extract from the second report of the Commissioners contains all that is necessary for insertion in this article:—

"From the series of experiments which we have just exposed, it results:

1. That a solution of alum, of salt, and of nitrate of potash, injected at ten degrees, answers for preserving bodies at a temperature below ten degrees of the thermometer; that, for a more elevated temperature, it is necessary to carry the density to twenty-five or thirty degrees, and immerse the subject in a liquid of ten or twelve degrees.

2. That it is preferable to employ the acetate of alumine, because it preserves better; as the skin experiences no alteration, and as the central organs remain *natural*, excepting the colour of the muscles which become bleached.

3. That the chloride of aluminium offers the same advantages.

4. That, in order to preserve parts of bodies which have not been injected, it is necessary to immerse them in a mixture of water, and of the acetate or chloride, marking five or six degrees.

But this part of the operation is transferred to the experiments which are to be undertaken on the preservation of objects of pathological anatomy.

Gentlemen, such are the series of experiments made by M. Gannal, since the first provisional report was presented to you.

The commission has attentively followed the new experiments; the results obtained, demonstrate that by M. Gannal's process bodies for dissection may be preserved, and the preservation prolonged beyond the term exacted by the most minute investigations.

* What does he mean by ten degrees?

As we have already stated, the soluble salts with an aluminous base, offer this preservative method, without any danger in their use, and they can also be procured at a low price.

Their antiseptic properties are founded on their chemical action, which modifies animal substances either by depriving them of their water of composition, which determines their putrefaction, or in opposing themselves to its immediate action.

It is, then, only an act of justice rendered to M. Gannal, in considering his labour as an important service rendered to science and to humanity, and which may prove of great utility in anatomical explorations, and in legal medicine." 231.

Dr. Harlan, the translator, bears testimony, from occasional observation to the merits of M. Gannal's process; but thinks that, "he has, perhaps, over-rated the extent and importance of his discovery." This will, doubtless, be found to be the case, and it applies to all new discoveries and inventors.

ESSAYS AND HEADS OF LECTURES ON ANATOMY, PHYSIOLOGY, PATHOLOGY, AND SURGERY. By the late *Alexander Monro, Secundus*, M.D.F.R.S.E. &c., upwards of Fifty Years Professor of Anatomy and Surgery in the University of Edinburgh. With a Memoir of his Life; and copious Notes explanatory of Modern Anatomy, Physiology, Pathology, and Practice. By his Son and Successor. Illustrated by Engravings. Octavo, pp. 300. Whittaker & Co. London; MacLachlan and Stewart, Edinburgh; Fannin and Co. Dublin.

THIS is an able, agreeable, and useful volume; and cannot fail, we think, to experience a welcome reception from the profession. To the surviving pupils of the late Dr. Monro it will prove peculiarly acceptable; and will recall many interesting reminiscences of that illustrious teacher. Trained from his very boyhood to the important duties of the anatomical chair, under the eye of his father—the first Monro—who may justly be considered as the founder of the Edinburgh Medical School, and who, by his pre-eminent talents and reputation, was so well calculated to kindle both enthusiasm and emulation in the breast of his son, it is not to be wondered at that Dr. Monro, Secundus, should have displayed, at a very early age, what was looked upon as a natural aptitude for anatomical science. His long and brilliant subsequent career, and the indefatigable assiduity with which he cultivated anatomy, physiology, and pathology, for more than half a century, together with the important discoveries he achieved in these departments, have earned for him an imperishable reputation. It is undoubtedly true, and cannot be too extensively known, that Dr. Monro, Secundus, broached more of the physiology and pathology of his successors than they have been disposed to acknowledge, or have had the candour to trace to the parent source. His lectures were a mine of public wealth, from which materials were borrowed by wholesale, and produced from time to time,

under a new garb, by writers, who contrived to occupy a large space in the public eye, and thus to reap a harvest of fame not their own. It would be invidious to pursue or illustrate this particular topic any farther. We shall merely content ourselves with saying, that it was high time for Dr. *Monro*—the present distinguished professor of anatomy in the University of Edinburgh—to come forward and vindicate, by the work before us, the just claims of his celebrated father. The task which he has thus undertaken, and which he has performed in a manner so creditable to himself, had become not only an act of filial duty, but an effort called for by honour and justice. He has been actuated by what Justinian so forcibly styles the "*Jus constans, et perpetua voluntas, suum cuique tribuendi*," and has not only given, in the discharge of this duty, a most pleasing memorial of his eminent father, but has contributed an interesting and valuable volume to modern medical literature.

By a fortunate coincidence, Dr. *Monro* has been enabled to place before his readers an account, by most competent judges, of the very *first* course of lectures which his father delivered, in the year 1758; and also of his very *last* course, in the College-session of 1806-7. The former is from the pen of the celebrated Dr. Carmichael Smyth; and it is so interesting that we shall subjoin it at full length. The latter is supplied by Dr. Robertson of Northampton; to whom, by-the-bye, the volume is dedicated.

Letter from Dr. Carmichael Smyth to Dr. Monro, Tertius.

" Charlton, November 19th, 1817.

" Dear Sir,

I should be highly gratified could I imagine, that any observations of mine on the late Dr. *Monro's* career as a professor of anatomy, could contribute in the smallest degree to illustrate his character. But when I attended his lectures, I was too young, and too little acquainted with the subject, to judge or appreciate his merit. As it is, however, possible that, after a period of nearly sixty years, I may be the only one now alive who was present at his debut, I will, with much pleasure, state to you the impressions thus made upon me at the time, and which the lapse of half a century has not yet effaced. Dr. *Monro*, *Primus*, who had long filled the anatomical chair, with reputation to himself and advantage to his country, began the course of lectures in the autumn of the year 1758, and after delivering the history of anatomy, and some introductory lectures on the blood, and other general subjects, resigned his situation to his son; who, it must be acknowledged, from his father's great popularity as a public teacher, had an arduous duty to perform. He very soon convinced the public that he was equal to the task, and the students were far from regretting the change that had taken place.

Dr. *Monro*, *Primus*, had embraced the doctrine of *Leeuwenhoeck* respecting the blood, and taught it to the last. Your father's first lectures were employed in giving a complete refutation of this system, which was placed on the shelf for ever. He clearly proved, that the different parts of the blood were permanently and essentially distinct from each other, and entirely independent of any aggregation or combination of globules. The novelty of a doctrine of so much importance in all physiological and pathological reasoning, with the clear and luminous manner in which it was explained, operated like an electric shock on the audience, and gained him a degree of confidence, which I believe no young man ever had at starting, but which his talents were well calculated to support. The students perceived in the other parts of the anatomical course, the same

clearness of demonstration, acuteness of dissertation, and accuracy of reasoning, that they admired in his refutation of Leeuwenhoeck's system. They could not help observing, that he was complete master of his subject; but that he possessed in an eminent degree another talent no less necessary for a public teacher, the proper mode of communicating his own knowledge to others. Your father enjoyed likewise, when he entered upon his public duty as a professor of anatomy, a great advantage over all his predecessors, from the high improvements made at the time in anatomical preparations, particularly from the art of injecting the bloodvessels, and corroding the parts thus injected; by means of which, he was enabled to elucidate more completely than could formerly be done, their numerous ramifications and communications.

Your father enjoyed also a pre-eminence over most other teachers of anatomy, from the use he made of mathematical calculations or diagrams, to illustrate the effect of compound muscular action. He applied this particularly to the action of the intercostal muscles, shewing the advantage arising from their oblique course. His reasoning on this subject, with a diagram which I copied at the time, I have still in my possession. But the prominent feature of your father's anatomical course, and where he shone with no borrowed lustre, was his preparations and demonstrations of the lymphatic vessels. Whether he, or his celebrated cotemporary, Dr. William Hunter of London, is entitled to the praise of their first discovery, is a point still, I believe, undecided; and I am very far from having the presumption '*tantas componere lites.*' But whatever difference of opinion there may have been on this subject, there can be but one opinion respecting the high merits of both claims, and the just praise to which they are entitled, for the zeal and success with which the subject was prosecuted and illustrated by both of them.

The above observations, you will perceive, are entirely confined to the time I attended your father's lectures, which was from the Autumn 1758, for the four or five following years. His subsequent discoveries respecting the communication between the lateral ventricles of the brain—*bursæ mucosæ*, &c.—I leave to you and other professional gentlemen to explain and appreciate. But before I quit this subject, I have one more remark to make.

Your grandfather laid the true foundation of anatomy, and of his fame, in his accurate description of the bones; upon which your father has erected a trophy that must carry his name to the remotest ages, so long as the science of anatomy is cultivated among men.

Your's,

J. CARMICHAEL SMYTH."

(Pp. xiii.—xvi. Memoir.)

Dr. Monro, Secundus, lived to an advanced age, and continued the active duties, not only of his profession, but of the anatomical chair, till his seventy-fifth year. The infirmities inseparable from old age then coming upon him, the remainder of his honourable and useful life was necessarily passed in peaceful retirement. When he had reached his eightieth year, he was wont to become very drowsy after dinner. He also became subject to occasional headache and slight bleeding at the nose. These symptoms were the preludes to an attack of apoplexy; from which, by the unceasing attention of his friends, Dr. Rutherford and Mr. Bryce, he partially recovered. But the malady was not eradicated; his weakness gradually increased; and, after the lapse of four years, he expired, without suffering, on the 2nd of October, 1817, in the 85th year of his age.

Of his private virtues, which were on a par with his public talents, it is pleasing to speak. He was a man not only most indulgent and affectionate

in his family circle; but remarkable for general and active benevolence. He was ever ready to assist the poor with his purse and professional skill; he was a subscriber to all the charitable institutions; and took a conspicuous part in the management of the Royal Infirmary. We feel it to be a duty, no less than a pleasure, to record these traits of this great and good character, inasmuch as—

“ The evil that men do lives after them ;
The good is oft interred with their bones : ”

and we are willing, as Journalists, to give historic permanency, as far as we can, to the virtues as well as the talents, for which Dr. Monro was conspicuous.

On the subject of his professional qualifications and demeanour, we shall give the testimony of a highly distinguished eye-witness—the late Dr. Gregory, of Edinburgh. We make no apology for the length of the extract; because it is a gem in its way, and is full of important instruction, especially to the junior portion of our readers. The portrait thus drawn by Dr. Gregory, is sketched with the hand of a master, and exhibits all the facility and power of that gifted individual.

“ The late Dr. Monro, of Edinburgh, long, and most deservedly, enjoyed the highest eminence which any man of the medical profession ever attained in Scotland. As an able, active, and meritorious professor of anatomy and surgery, he was, for more than half a century, at the head of the great medical school of Edinburgh, and, for the greater part of that time, as a practical physician, he was unquestionably at the head of his profession in Edinburgh, and in Scotland; to many, even very distant parts of which he was often called, and from every part of which, as well as of England and Ireland, he was frequently consulted by letter, in cases of peculiar difficulty or danger.

Hardly any life, even of a literary man, can be conceived to afford fewer interesting materials for a biographer than Dr. Monro's. It was distinguished by no striking event, it was chequered by no vicissitudes of good and evil; it was a life, from early youth to extreme old age, of almost uniform and uninterrupted prosperity. Nay, he seems scarce to have felt any of those difficulties and discouragements in his splendid career, which most men of literary professions, but especially physicians, experience in their progress to the highest honours and rewards to which they can aspire; and certainly his progress never was retarded by any such adverse circumstances. His success, on all occasions, like the victories of Timoleon, seemed always to be accomplished with ease; yet it cannot, on this account, be attributed altogether to good fortune, or mere chance. Some favorable, almost accidental, circumstances contributed, no doubt, to his great success in life; but much more of it must be attributed to his own merits; to his constant unexampled activity in every pursuit in which he engaged; and to his good sense in perceiving and improving those advantages which might be considered as mere favours of fortune.

It must be useful and instructive, and, therefore, in some respects interesting, to know what fortunate circumstances, and what merits of his own, chiefly raised him to that eminence which he so long maintained. By his father, he was from his earliest youth carefully instructed in anatomy, and soon acquired such a taste for that science, and prosecuted the study of it with such ardour and perseverance, that, in the year 1753, he assisted his father in his anatomical lectures in the University; and, in the year 1755, was appointed conjunct professor of anatomy and surgery along with his father, who resigned the office entirely to him in 1758. From that time he continued to teach regularly for

more than fifty years. His lectures were attended by vast numbers of students, generally from 200 to 400 every year. But, in the whole time, fifty years, or more, that he taught anatomy and surgery, his lectures were attended, in all, by fourteen thousand students.

This, of itself, may well be regarded, as a good proof of the merit and usefulness of his lectures, which indeed were conducted on a plan of the most extensive utility. It may well be doubted whether so useful a preliminary and preparation for the study and practice of physic and surgery ever had been given before in the form of lectures, or in any other form.

Dr. Monro's acknowledged merit as an anatomist, and as a teacher of surgery, though he was not himself a practical surgeon or operator, almost immediately brought him into very extensive practice as a consulting physician in the more important and difficult chirurgical cases; and in many cases, strictly speaking, not chirurgical, as not requiring or admitting of relief by any kind of manual operation; but for the complete understanding of which, with a view either to prognosis or practice, the most accurate anatomical knowledge is peculiarly requisite.

The quickness and clearness of his perception in such matters, his strong good sense, his decisive judgment, and the intimate knowledge of every part of the practice of physic, which he uniformly displayed on those occasions, soon, and most deservedly, procured him general confidence, and very extensive practice as a physician.

Perhaps no man of the medical profession ever more strongly illustrated by his conduct, and by the general tenor of his practice, the important truth, that the most valuable part of a physician's merit is good common sense steadily employed on a particular subject. If that one essential requisite be wanting, learning, science, genius, and every other accomplishment, are of no avail.

It is recorded of an ancient Greek physician, whose name (Trophilus) and whose apophthegm, but none of whose writings, have descended to us, that when he was asked 'Who would be a perfect physician?' he answered 'He who is able to distinguish what can be done, and what cannot be done.' As this apophthegm has been preserved, it is plain that his countrymen and contemporaries perceived the truth, acknowledged the merit, and felt the force of it: as every physician must do at once, who has been much engaged in practice, and who has fairly attended to what he saw.

But most physicians seem never to have known, or obstinately to have disregarded, that most important and almost self-evident truth; and very few of them have had the merit of regulating their practice according to that most precious maxim.

This merit Dr. Monro possessed in a very high degree. His just notions of general science, his thorough knowledge of medical science, but especially of anatomy, and of that part of pathology, with respect to the nature and causes, and seats of disease, which is ascertained by the dissection of morbid bodies, or what is often called morbid anatomy; and most chiefly his own strong good sense, and constant habit of strict attention and accurate observation, in his own practice, enabled him to perceive at once the futility of many hypothetical and erroneous, but very fashionable and prevailing doctrines, with respect to the nature and causes of many diseases; and of course led him to distrust, and often to reject, as unavailing at least, if not hurtful, many supposed remedies, and modes of practice, which were generally employed in consequence of those hypothetical dogmas.

The same accomplishments equally prompted him, and enabled him, to appreciate the real merits of many remedies which, from time to time, were introduced into practice with the most extravagant applause, purely on empirical principles; that is, on experience, real or supposed, of their good effects, without even an attempt to account for those supposed effects, or any pretence to explain their mode of operation.

Thus most effectually preserved from two of the worst and most frequent causes of bad medical practice, *his* had the merit of being simple, rational, and powerful; perhaps as powerful, and consequently as successful, as can be employed in the present imperfect state of medical science. But even the being spared the misery of enduring the administration of many unavailing remedies, bad if only frivolous, but much worse if severe also, was a matter of infinite consequence to his patients. Of his merit as a practical physician, when acting singly, his professional brethren, who have had occasion to consult with him, cannot fail to have a very high and just notion, when they recollect what his conduct was in consultation. Without any subtle disquisitions, without any controversies about obscure or disputed points, without any credulity as to the virtues of particular remedies, and far above the miserable vanity of arrogating to himself any superior skill, or pretending to extraordinary success in his own practice, he was generally the first to propose, and always was ready most candidly to agree with others who proposed, those simple and powerful modes of practice, from which alone, in urgent and dangerous cases, any essential benefit can be obtained. And in the many hopeless cases, in which his assistance was required, he was generally the first to observe that, 'little or nothing can be done in this case;' or, 'that there is no room for active practice here.'

Such remarks invariably led to the very humble and modest, but only rational practice which can be employed in these cases, the administration of remedies which may alleviate the sufferings of the patient, though they cannot cure the disease."—(*Memoir*, pp. ix.—xii.)

The second part of the work before us consists of the essays and heads of lectures of Dr. Monro, *Secundus*, enriched and illustrated as they are throughout by copious and valuable notes from the pen of the editor, Dr. Monro, *Tertius*. Of this portion of the work we feel that it would be difficult, if not impossible, to give a regular analysis. It embraces such a variety of important subjects, and comprises so much minute information, anatomical, physiological, pathological, and practical, that our limits would not do justice to it. We feel, therefore, that we are best discharging our duty to our readers by referring, and recommending them, to the work itself. In fact, as a standard book, and for occasional consultation, it ought to find a place in every medical library. If it should be objected by some that the opinions and labours of the late Dr. Monro belong to the last age, if not to the last century, and have been superseded by more captivating, and more modern, if not more accurate, researches; we would reply that the objection is met in limine by the real truth that the learned editor has everywhere added, in notes, such explanations of his father's doctrines, and (when needful) such corrections of them, as the progress of time, and the advancement of science, have rendered desirable. The work therefore, in point of fact, has quite a modern aspect; for the editor's notes, together with the communications of his various distinguished correspondents, bring up every thing, whether speculative or practical, *au courant du jour*; and thus super-add the attraction of novelty to the more solid and lasting merits of the volume.

On looking back, aided by all the advantages of our modern lights, at what the late Dr. Monro did and taught, no one can fail to perceive that he must have been a man of wonderful sagacity, and greatly in advance of his age. Long before the diagnostic discoveries of Laennec had dawned upon the world, Dr. Monro practised exploration of the chest, by manual examination, percussion, and agitation of the body. This circumstance is verified

by the testimony of Sir Charles Bell and Dr. Alison of Edinburgh, both of whom had attended patients with him, labouring under diseases of the thorax. Moreover, he taught in his lectures, in the most distinct and emphatic manner, *the identity of human cow-pox and small-pox*; in other words, that cow-pox is merely small-pox, modified by transmission through the cow; a most important doctrine which has been verified by the experiments of Mr. Ceely (an eminent surgeon of Aylesbury*) only within the last two years. Such facts as these, in the estimation of the profession, and of all posterity, must stamp his fame.

A TREATISE ON THE SYMPATHETIC RELATION BETWEEN THE STOMACH AND THE BRAIN; AND, THROUGHOUT, BETWEEN THE DIGESTIVE AND THE NERVOUS SYSTEMS, IN THE CAUSATION AND CURE OF DISEASES. With an Appendix, containing a few Observations on certain Points connected with the Treatment of Chronic Disease, and its attendant Debility. By Charles Wightman, M.D. Licentiate of the Royal College of Physicians of London, and Resident Physician in Newcastle-upon-Tyne. London, Simpkin, Marshall & Co. 1840. Small Octavo, pp. 192.

It has been said "*Medicina nusquam non est*,"—an aphorism expressive at once of the universality and antiquity of our art. No less universal, and scarcely less ancient, is the doctrine of sympathy betwixt the stomach and the brain. It is, in fact, one of the most familiar, as well as most fundamental doctrines of physic; and has been taught from time immemorial; although, perhaps, it has been looked upon as too much of a truism to be specially treated of in monographic essays. We do not say this, in any degree, from a desire to be over-critical with Dr. Wightman, or to disparage his favourite subject of contemplation. Far otherwise! We freely bear witness to the talent, as well as diligence, he has displayed in illustrating this sympathetic relation, which he justly considers has such an important pathological and practical bearing. It is to the originality of his researches that we demur,—not to their value or usefulness. There is a little prudery, we think, in so well-informed a writer ransacking old bibliographical catalogues, and citing the almost forgotten works of Veegens, Rega, and Rahn, as the only ones bearing upon his subject. In this, as in some other instances, we suppose—

" 'Tis distance lends enchantment to the view; "

for on no other hypothesis can we account for our author's thus reversing Time's telescope, and overlooking what has been written, and well written, on the doctrine of sympathy, by later and even contemporary authors. It

* See Vol. VIII. of Transactions of the Provincial Medical Association.

is not for us to speak of the writings of the Editor of this Journal, except in modest and restrained terms. But delicacy need not altogether prevent us from referring those whom it may concern to the various works of Dr. James Johnson, for copious and forcible illustrations of this very doctrine, viz. the intimate sympathy subsisting betwixt the brain and stomach, on the one hand; and betwixt the digestive functions and the influence of the nerves, on the other. We might quote his Treatise on "Civic Life, Sedentary Habits, and Intellectual Refinement," published more than twenty years ago. We might also quote his striking chapter on the "Morbi Eruditorum, or Diseases of Literature," at p. 143 of his book on "The Influence of the Atmosphere," published in the year 1818. Or, finally, we might express our surprise that the graphic picture of the *patho-proteian malady*, (as Dr. Johnson calls it, in his "Economy of Health," published so lately as 1837,) should have escaped the notice of a gentleman of Dr. Wightman's literary proficiency, and studious habits. But, waiving this strain of discussion, as one in which we may be supposed to have too near a personal concern, we may inform Dr. W. that his favourite subject of "Sympathy" is pretty fully treated of in Bichât's "Anatomie Generale;" and that Ploucquet's "Literatura Medica Digesta," under the heads "Consensus" and "Sympathia," supplies a whole host of preceding authorities.* It would be foreign to our purpose to go more at length into this matter, as we are contending for truth rather than for victory.

It is time, however, to enter more particularly into the contents of Dr. Wightman's book, and to examine them more in detail. After a well-written Preface and Introduction, he proceeds to discuss the influence of the stomach upon the brain; and of the brain upon the stomach. He illustrates this "sympathetic relation"—1. By the consequences of Injuries to the Head. 2. By the Effects of external Violence on the Epigastrium. 3. By Fever, more especially Typhus. 4. Acute Gastritis. 5. Apoplexy. 6. Epilepsy. 7. Hydrocephalus. 8. Chronic Disease of the Brain. 9. Sick-headache. 10. Dyspepsia and Nervous Disorder combined. 11.

* Even non-professional writers are no strangers to this sympathetic doctrine. Shakespeare, who by the wonderful power of his intuitive genius, seems to have known everything, was well aware of the influence of the depressing passions (acting, of course, through the brain and nerves,) in suspending the function of the stomach. Cardinal Wolsey, on first discovering his loss of Court favour, is made to bewail his altered fortunes, in the following beautiful and touching terms:—

"————— nay then, farewell!
I have touch'd the highest point of all my greatness;
And, from that full meridian of my glory,
I haste now to my setting;—I shall fall
Like a bright exhalation in the evening,
And no man see me more!"

The King, in announcing to the Cardinal the loss of his royal countenance, and the disgrace sure to ensue, does it in the following words: a physiologist or pathologist could not have expressed it better:—

"————— And now to breakfast, with
What appetite you may!"

Mental Exercise. 12. The Operation of certain Poisons. To the above is added a section in vindication of the late Dr. Hamilton's plan of treating various acute and chronic diseases by purgative medicines; and an Appendix on the influence of minute doses of mercury, in the treatment of chronic disease, according to the instructions of Dr. Wilson Philip. This simple enumeration will convey some idea of the *practical* interest and importance of the work.

As familiar examples of the influence of sympathy between the brain and stomach, Dr. W. gives the following:—

“ When a person previously in the full enjoyment of health, and possessed of great strength of body, receives a severe blow upon the head,—in addition to the abolition of sense and motion, (the direct effect of the concussion of the brain,) vomiting in general almost immediately takes place; and not only are the contents of the stomach itself rejected, but a quantity of bile, of a dark green colour, entirely different from the healthy appearance of this fluid, is thrown up. Most individuals who have been unaccustomed to sailing, while affected, on going to sea, with certain indications of disordered brain, such as vertigo, anxiety, and prostration of strength, are also seized with nausea and vomiting, the symptoms of disordered stomach; more especially if the weather be tempestuous, and consequently much tossing of the vessel upon the waves. There are some persons, also, whose nervous system is so irritable that they experience the same symptoms of stomach disorder from dancing for any length of time; from riding in a carriage, particularly if they be drawn backwards; from swinging; and from turning their bodies in rapid gyration. In all these cases, it is evident that the morbid affection of the stomach is only secondary,—or the consequence of this organ sympathizing with the brain; the functions of which are in the first place disordered by the blow inflicted upon the head, the motion of the carriage, the tossing of the vessel upon the waves, and the rapid circuitous movement of the body; indeed, in the latter instances, this is sufficiently demonstrated by the vertiginous sensation primarily induced. This disorder of the functions of the brain occurs in these cases, although there is no lesion or disorganization of its structure; but solely from its commotion excited by the causes mentioned; by which commotion the nervous influence is disturbed—interrupted at its source; a suspension of the balance between the brain and the stomach consequently takes place, and the latter by sympathy manifests the disorder of its functions. On the other hand, a common example of morbid affection of the brain, arising from sympathy with the stomach as the organ primarily disordered, is presented to our notice by the effects of the indigestion of aliment. It is undeniable that if food, either difficult of digestion, or in too great quantity, be received into the stomach, not only will this organ be oppressed, as shewn by its own proper symptoms of nausea and vomiting; and a quantity of sordes will be accumulated in the bowels, occasioning diseases in these; but also headache, vertigo, diminution and deprivation of sight in various ways, deafness, noises in the head, and confusion of the internal senses, the well-known indications of cerebral disorder, will be induced;—all which symptoms will disappear on the offending matters being discharged from the stomach by the operation of emetics; and from the bowels, by that of purgatives.” Pp. 2—4.

Of this explanation, we shall only say that it is good, according to the present reigning doctrines; but that, in point of fact, it explains *nothing*:

“ *Felix qui potuit rerum cognoscere causas.*”

In tracing the arcana of nature, we are too apt to mistake words for things!

We speak of sympathy in physiology, just as we speak of attraction or repulsion in physics. The word, in either case, simply expresses a *law*: it does not explain the *power* whose mysterious movements constitute that law. The language of science does not advance us one jot towards the fountain-head of knowledge. This is mortifying to the pride of intellect. But yet it is the best and most salutary sort of knowledge to know that we are ignorant; or, in other words, to be aware how little we know of the mysterious agencies going on within and around us. In what we have just said as to the defectiveness of his explanation, we need scarcely say that we do not consider the defect chargeable to Dr. Wightman; but rather to the present imperfection of our knowledge; or, perhaps, of our faculties.

The space to which our remarks have already extended, makes it impossible for us to notice, even cursorily, the different chapters into which our author's excellent little work is sub-divided. We must therefore content ourselves with recommending them generally. We are quite sure that a careful perusal of the whole book will be useful to many, and acceptable to all; and we sincerely wish for it a rapid and extensive sale. But we cannot conclude without telling Dr. Wightman, great as is our respect for his practical talents and judgment, that we cannot go along with him in his out-and-out admiration of Dr. Hamilton's purgative practice. The eminent founder of that practice was himself, we *know*, a little too indiscriminate in its application; and, as was almost to have been expected, his admiring imitators have been still more so. The plan, from its apparent simplicity and energy, possessed great attractions for the young, the indolent, and the innovating; but we believe there are few—very few—whose opinions have been matured and chastened by experience, that still cling to the practice, or continue it to the same extent as inculcated by Dr. Hamilton.

As little can we acquiesce in the sanction which Dr. Wightman has given to the paramount utility of minute doses of mercury in the treatment of chronic disease; a practice enjoined by Dr. Wilson Philip. For that distinguished physician and physiologist we entertain very high respect:—we also think most favourably of Dr. Wightman. But nevertheless we retain our own opinion, founded on experience; and beg to differ from them both. "*Amicus Socrates, amicus Plato; sed magis amica veritas.*" We have found, in our own practice, that the method of minute doses will not do. And our experience, in this instance, is confirmed by that of others; for we remember, a few years back, when Dr. Wilson Philip's book on the subject first came out, we put queries to the most enlightened of our medical brethren as to the result of their experience on this point. They were unanimous in condemning the practice of minute doses, as being at once inert, and unsatisfactory. Nor is this the sole objection. So much time is required to achieve success in those instances where success follows the "minute" practice, that the physician is ever exposed to the suspicion, either of the patient or of the bye-standers, that he is procrastinating the cure for mercenary purposes;—a suspicion than which none can be more galling to a man of feeling and of probity; and against which the "*conscia mens recti*" is no adequate counterpoise. We may also observe that those who find the "minute-dose" system to answer, must have ways and means of securing the confidence and stability of their patients to which we are strangers. We constantly find, that where a case hangs long in hand, the patient, or

his friends become fidgetty and unsettled—if not dissatisfied. The upshot is, that long ere the “minute-dose” plan, or any other plan which requires time for its element, has had a fair chance of succeeding, the patient is off, at rail-road speed, to place himself under the infallible care of some fortunate juggler at some fashionable watering-place!

MEDICAL REFORM.

I. THE TOUCHSTONE OF MEDICAL REFORM; in Three Letters, addressed to Sir Robert Harry Inglis, Bart. M.P. by *Joseph Henry Green*, F.R.S. Professor of Anatomy to the Royal Academy, one of the Surgeons of St. Thomas's Hospital, &c. Highley, London, 1841.

THIS is not the first time that Mr. Green has appeared before the public as a reformer. This, indeed, is no especial distinction, for all are reformers now-a-days, and the difference lies in the extent to which men go, not in the consent or refusal to move.

Mr. Green's opinions will command attention and deserve much weight. His absence from the field of private practice and of party strife—his independent fortune and position—his high intellectual and eminent professional attainments—and last, not least, the gentlemanly bearing and strict honour of the man, ensure to his sentiments a favourable audience, and remove all suspicion of interest or faction. If a bias can be supposed to stick to opinions emanating from such a source, it can only be the bias of caste, and a leaning towards aristocracy.

We shall content ourselves with putting our readers in possession of the principal views of Mr. Green, without any comments on our part. Events are marching on, and predictions may be falsified before they can be published. Like Lord Melbourne, we feel a particular dislike to venture on prognostications. They are extremely dangerous. Who would have guessed that poor Mr. Hawes's Bill would have vanished so miraculously from the floor of the house? Wise men imitate Lord Burleigh—shake their heads, and say nothing.

Mr. Green's pamphlet consists of Three Letters, intitled respectively—

I. On the Character of a Medical Man in connexion with the Nature and Objects of a Profession.

II. On the Institutions calculated to Educe and Foster the Professional Character.

III. On the Regulation and Economy of the Medical Profession.

I. In setting forth the character of a medical man, Mr. Green lays it down as undeniable that his qualifications should consist in—

1st, The possession of *technical knowledge and skill*, in that degree which shall enable each member of the profession to apply all the resources of art, which the whole profession can supply. 2dly, *Scientific insight*, or the posses-

sion of the knowledge of those laws or rational grounds, which form at once the principles and ultimate aims of all professional knowledge. And, 3dly, *The character of a gentleman*;—that his conduct shall be the pledge and proof that he pursues his profession as a liberal science, and that, in all his dealings with his patients, his professional brethren, and the community, he is ever guided by the principles of strict professional honour.

Of course this is the ideal of a professional character—what all should aim at, none can attain, but every one will be the better for striving to reach. Mr. Green dwells forcibly on the connexion of medicine with general science, on the necessity of a liberal education, and on the security this offers for the promotion of the philosophy and diminution of the empiricism of physic. And are not the following observations worthy to be read and to be remembered? We think they are.

“It has been my aim to prove the vital connexion between the profession and the science corresponding thereto, so as to establish a balance of sight and insight, between individual skill and the general principles which predetermine its application, and hence likewise the connexion between the profession and the universal sciences, between science itself, and the habit of sciential thought, in the unity of its spirit and essence. It is herein that we find the ground of a *liberal education*, common to the professions, and to the gentry of a country, of an education fitted to maintain the continued succession of a class of *Viri liberales*, of gentlemen, of men imbued with the liberal sciences, of professional men, who in full possession of a liberal science, apply it to the needs and benefits of their fellow citizens. Nor can it be deemed of slight importance, that those destined for the medical profession should partake of that education which is required in common for the liberal professions as an integral part of the gentry of the country, with the sense and habits of a common training in their duties, moral and religious, in their obligations as citizens, and in their sentiments of professional honor as gentlemen. And if the conduct of the medical practitioner is to be the *proof* of his pursuing his profession as the result of a liberal education—of the cultivation of the sciences, as the grounds of the professions, with the common bond in all, that the several sciences are branches of that universal science, the essence of which being the reason tends to give distinct insight, and ultimate aim to all professional knowledges—we may add that the cultivation of science for its own sake, as the predominant object, can alone entitle him to the rank of a gentleman, and must ever constitute the essential difference between a profession and a trade. For, as in the latter, the art is rightfully considered as the exclusive means of gain, so the former must inevitably be degraded into a trade, whenever mercenary and sordid motives supersede the scientific aim. It is not indeed an entire elevation above empirical practice that constitutes the difference between the professional man and the empiric; for both the imperfections and the difficulties of the art, which has so complicated, and at the same time so endlessly variable and fugitive, a subject as the human body in health and disease, will long continue to impose the necessity of practice more or less empirical on the wisest and most profound of the profession. But it is the absence of science, or the contemptuous neglect or disclaiming of the same; it is the elevation of a blind empiricism above science, and as superseding all connexion therewith, that constitutes the empiric, and in all reason degrades him to the carrier on of a trade, a business, or at best an equivocal art. These positions are strictly applicable to the medical profession. We demand of all its members scientific aims and objects; we denounce as empirics those who neglect or disclaim science; we reject as tradesmen those for whom the profession is only a lucrative business; and we brand as quacks those who dishonestly make

it the means of levying a tax on the hopes and fears of the ignorant and credulous.

But we say likewise that, as the member of a liberal profession, the medical practitioner is to evince in his whole conduct the character of a gentleman. And it is impossible that the members of the medical profession should have that due weight in society, and occupy that place and rank to which the science entitles them, unless their qualifications and conduct individually, are consonant with the requirements of the professional character, and unless they show by the whole tone and tenor of their conduct and demeanor, that they are fully actuated by its spirit. The character and dignity of the profession, of which each individual member is to be the representative—the education, manners, and habits of those with whom it should be his ambition to associate, namely, those who form the gentry of the country, and constitute its mind by virtue of elevating pursuits, scientific attainments, literary refinement, and moral excellence—and no less the demands of society at large, dictated by that high degree of civilization, to which it has attained in this country, all these challenge those excellencies, which are distinctive of our humanity, and which indeed, are therefore required of every man, but which no calling is more fitted to elicit, and which no calling more imperatively requires, than the medical profession.” 16.

II. The Letter on the Institutions calculated to form the Professional Character, is mainly occupied with the same idea, the advantage of connecting the study of medicine with that of general science. The only passage we are inclined to quote, is one referring to the University of London.*

“ In alluding to this institution, on the one hand, I should be acting an unworthy part, if I were to flatter the predilections of its unconditional admirers; and on the other hand, I should be unwise to withhold my approbation of an institute, which possesses both the power and the means of exercising the most beneficent control over the future prospects of the medical profession. And I trust, that under its authority, we may yet see the medical schools of the metropolis connected with colleges, in each of which we might find a *school* for elementary instruction, a *senior department* for instruction in those knowledges which are common to all the professions, the proper objects of collegiate education, and heretofore named the liberal arts and sciences, and a *medical department* for the studies properly medical; and these provided with their due appointment of accredited teachers and professors. And I no less fervently hope that the means will be in each case provided of residence within the walls of the college; as I am sure that we cannot estimate too highly the advantages from this provision for an intermediate state between that of the full-grown school-boy and the independent young man—a state during the most perilous period of human life, in which the individual may remain *sub tutela*, yet no longer as a boy, but as a man influenced by the principles and estimation of his equals, by the example of his seniors, by the habits and laws of the college in which he dwells, and mildly coerced by a peculiar discipline, which even at the time he feels to be an honourable distinction, and which he knows will be hereafter considered by others as entitling him to a distinct rank in society. Lastly, in the co-organization of all the colleges in the unity, and by the bond of universal science, we may hope to find the common grounds of professional excellence gradually reduced to the most effective system, as a complexus of means to various ends, ideally re-united in the same ultimate end.” 35.

* Not University College, but the Metropolitan University.

We admire these aspirations of Mr. Green's. They show his singleness of purpose and integrity of heart. But, so far as the facts have gone, we are not quite sure that anticipations of this sort have been realised. We are not aware that the medical students of King's College or of University College have signalised themselves by their morality or gentlemanly bearing—or that, in these respects, they have proved any better than the pupils of the other schools.

III. The Third Letter comes more to the point than its predecessors, and touches the *raw* of medical reform more sharply.

Mr. Green proclaims himself an enemy to quacks and quackery. Yet he scarcely knows how to go about their demolition.

"It is rather a consideration of the practical difficulties, than any doubt of the principle of interference, that would prevent my urging the Legislature to withdraw its countenance, accorded under a specious and misused plea of liberty, from the knavish quack, and to protect by penal law, his patients, who vindicate their civil rights at the expense of being robbed, maimed, and poisoned. Certainly it is disgraceful to the country that its government should derive a revenue from so unholy a source as that of patents granted to secret remedies and pernicious nostrums. And, at all events, as the writer of the excellent article on Medical Reform in a late number of the Quarterly Review, has pointedly argued, if every individual is to be at liberty to choose his medical adviser in his own case, he ought to be restricted at law from making others the victims of his whims and caprices; and whenever his functions impose on him the duty of selecting a medical practitioner for a public office, or of appointing him to the charge of others, his choice ought to be limited to those whose qualifications have been tested and approved by the legally constituted authorities." 40.

Mr. Green points out the numerous licensing bodies, their clashing enactments, the want of some controlling power to give harmony to their regulations and direct them to a general rather than a selfish object, and their insufficient powers of protection to their members and repression to impostors. And he adds—

"If then I am right in considering these as the main grounds of the grievances complained of by many members of the profession, and implying a serious drawback on the utility of the medical profession to the community at large, it cannot be doubted that for their rectification and removal, the most pressing need, offered for deliberation to the legislature, is that of forming an efficient *head* for the government of the whole profession, so constituted and vested with such powers as shall secure, under varying circumstances, the unity of the profession, in accordance with its final aim and intention. In considering this important condition, both of the stability of the profession, and of its efficiency, in connexion with the national interests, various plans will suggest themselves, but probably the establishment of a STATE COUNCIL FOR MEDICAL AFFAIRS will be found to be most in harmony with our institutions, and congenial to our habits, and will be best calculated for providing an effective bond of union in regulating and protecting the interests of the different departments of the profession, as *one body*, having an essential community of interests and objects; this council emanating from, and responsible to, the Government of the country for the efficiency of the profession, and for the performance of its duties, private as well as *national*." 44.

"If then the remedy for the evils above adverted to is to be sought in the projected Council of State for medical affairs, the consideration of its constitu-

tion and of the mode of its appointment cannot be wholly passed over; and perhaps the following hints may be available in the settlement of the grave questions which these subjects involve, and which must await their final adjustment by the consent of parties seriously affected and variously interested. 1st, As the functions of the Council will be *deliberative*, it should consist, as is indeed implied in the name council, of *various* members; though for the dispatch of business it is evidently desirable that they should be as few as the nature of the constitution of the council permits. 2dly, As representative of the different corporate bodies,—if the principle of representation be adopted in the constitution of the Council, though it is not essential to the plan and involves some serious difficulties—as representative, I say, of the corporations, the proceedings of which are submitted to it for discussion and approval, and as reciprocally influential of the proceedings of the corporate bodies, which it regulates, the Council might consist of members from each of the medical corporations of the United Kingdom;—whether from all the departments of the profession, whether one or more from each, and whether in like proportions from every one, we leave here undetermined. Thirdly, as the corporate bodies must be best acquainted with the capabilities of their own members and their relative fitness for the duty required, we anticipate no objection to their *nominating* and *recommending* their representative in the Council; but, as the functions of the Council imply pre-eminently *duties* to the profession at large and to the country, we expect that the right of *appointment* will be claimed by the Crown. Fourthly, as the Council is to be the depository of a trust for the benefit of the nation, and therefore a functionary of the Government, we must anticipate the addition of *Lay Assessors* appointed by the Crown, though the reason assigned does not warrant us in expecting that they will form more than a small proportion of the members, or that they will be other than judicial authorities or legal advisers, and one of the members of Her Majesty's Government." 47.

All *bye-laws* and *ordinances*, emanating from these for the regulation of their own administration, or of the practical departments of the profession, over which they preside, should be submitted to the State Council for its *approval* as the *indispensable condition of their validity*. The accounts of receipt and expenditure of the corporate bodies might be laid before the council.

It may well deserve consideration, whether the duty of taking *cognizance of the practices of unqualified* persons might not be properly committed to it;—and whether, with this view, and as far as this specific object is concerned, it ought not to form a tribunal invested with powers judicial and penal.

Mr. Green hints, too, that all *druggists* and *chemists* and *persons serving and compounding medicines*, all *keepers of houses of reception for lunatics*, all *dentists*, *cuppers*, and *the like*, should be obliged to have their qualifications examined, to have a *license* for their several callings, and to be amenable to the State Council for medical affairs. And he conceives that the same tribunal might be armed with authority to expel from the profession all those, who by *dishonourable practices*, had rendered themselves unworthy of the character of members of a liberal profession, whether by the use of secret remedies, by advertizing, by partnerships in trading concerns, by calumnious reports of their professional brethren, by breaches of professional confidence, or by whatever else may be considered derogatory to a professional character.

And this council might attend to the public health, appoint district boards, and arrange medical relief to the poor.

But what is to be done with the present colleges? Are they to be swept away, or preserved and rendered more efficient? Mr. Green argues the matter thus.

"A question meets us at the very threshold of the inquiry, which implicates the safety and continued existence of the metropolitan medical corporations. The main design of these institutions appears to be that of applying to candidates the requisite tests of competency in order to their qualification as practitioners. But it will be said that this has been already done in the cases of Doctors of Medicine at the universities of Oxford and Cambridge; and it may be asked why the graduates of these Universities, with the proof of competency which their degree affords, should be subjected to fresh tests, in order to enable them to practise in London or within seven miles around it. And this question is again the parent of another; why the degree conferred by a University should not be in every instance likewise a license to practise; provided always that its course of instruction be adequate and known, and that it be not suspected of venality in disposing of its degrees. Now this is the main question; for a University has been instituted in London with the main design of conferring medical degrees, and if the foregoing question be answered in the affirmative, it would be difficult to evade the conclusion, or avoid the practical results, that the London University would ultimately become, as has been proposed, the sole source of the licenses to practise, not only of doctors of medicine, but of surgeons, and of general practitioners;—at all events, no very solid reasons could be assigned for the maintenance of the medical corporations of London, if it be true that their functions are confined to ascertaining the qualifications to practise, and that the London University is equally competent to discharge these functions, and is required to perform them in its appointed vocation of conferring degrees. But, specious as this mode of reasoning renders the argument, the truth will be found, I venture to say, in the fact,—implying a very different reply to the question above proposed,—that a university is not competent to perform the duties of the medical corporate bodies. These, indeed, have all the means and appliances of examining the qualifications for a license to practise in their respective departments; and it can scarcely be doubted that in an examination, of which the principal merit is practical, they will have all the advantages derived from the superior attainments of the examiners;—and if a University be better fitted to test the progress of education, preliminary, accessory, and professional, through its different stages, yet it offers no inducements to men of the greatest experience and eminence to contribute their aid in ascertaining its requisite practical sufficiency. It has been, I apprehend, a felicitous result of a London medical education, in connection with its medical corporations, that in giving it throughout a practical tone it has eminently contributed to the character of good sense, which distinguishes the English practice of medicine and surgery. But these corporate bodies, in their nature and design, have other most important functions, conducive to the well-being of the profession over which they preside. They are the *representatives* of the departments of which they are respectively the heads;—they are in their intention the *guardians of the interests* of the profession; and if they have been thought remiss in their duties, it may be fairly attributed rather to a deficiency of their powers than to any want of inclination or zeal;—they are the great organs for promoting the cultivation of the science of the profession, and fitted for collecting and distributing information, the bonds and links of the actual members of the profession throughout England and its vast dependencies, for preserving the unity of the profession in the spirit of ever expanding science, and of professional honor. That their means of exercising these salutary functions might be enlarged cannot be doubted; but we shall in vain look for the same capabilities of maintaining a living inter-communion of the whole actual profession in any institutions, of which the sole purpose terminates in the completion of education." 57.

Mr. Green thinks that it was an error in the authors of a Metropolitan University not availing themselves of the advantages and co-operation of the existing colleges. It is singular that those who hailed the establishment of that university as a death-blow to the colleges, are as loud as ever in their demand for reform and assertion of its necessity—a proof that either such an university is unsatisfactory, or that it has failed in coping with the colleges while the voluntary system operates.

Mr. Green applies himself to the *College of Surgeons* in particular, and specifies the reforms he would see in that.

He is opposed to very popular and open elections in a scientific body. From such would spring, as from a hot-bed, all the evils of intrigue and faction. Evils foul enough in the political world—but in the scientific—

Most foul, strange, and unnatural.

“But,” says Mr. Green, “it may be perfectly true that members of the same class as those eligible into the Council may now, from changes in the profession and improvements in education, have become a body, whose attainments and qualifications it would be unwise to overlook or neglect, in any probable change of the constitution of the profession; and I hold it to be a legitimate object of inquiry whether there are any means of producing (consistently with the design of our institution and the welfare of the profession) a greater confidence in the College, a closer union of its members, and thereby a probable extension of its influence and benefits.

And though there may be no valid reasons for expecting that the functions of the College of Surgeons would be exercised with more advantage to the public or the profession, yet for the purpose of promoting a cordial sympathy and communion of men engaged in common professional objects and having common interests at stake, I would not withhold my assent in any revision of the charter to a modification of the mode of electing members of Council, and to the concession of an *elective privilege*, the conditions of the extension of which beyond the Council I proceed to discuss. And in entering upon the question of these conditions, we dare not for a moment lose sight of the principle, which is to guide us throughout, that the College is essentially a College of Surgeons and unalterably and eminently an institution for the promotion of the *Science of Surgery*. It follows, therefore, undeniably that the first condition of qualification for enjoying the elective franchise is that of *practising Surgery exclusively*; and, negatively, that the elector neither practises pharmacy nor midwifery, nor belongs to any other college or body incorporated for the promotion of physic, pharmacy or midwifery. That this is not an invidious distinction will be at once apparent, if we consider that the members of the College, who are *Surgeon-apothecaries* form an overwhelming majority, and that making Surgery a subsidiary qualification of their calling, they cannot be supposed to have that interest in the objects, for which the College of Surgeons is instituted, and which the elective trust imperatively requires.

When we consider the mixed character of the members of the College, it is impossible not to see that a broad distinction must ever exist between those who are *Surgeons by profession*, and those who make *Surgery a subsidiary qualification*: and in the changes here contemplated we cannot, therefore, doubt the propriety of dividing the two classes, and of distinguishing them by the respective designations of *Fellows* and *Licentiates*. In connexion however with this division, we propose to make it the means and occasion of raising the *standard of surgical education* by requiring of the proposed *Fellows* such attainments as shall eminently fit them, not only to be electors but eligible to all places of honor and trust in an institution the object of which, I repeat, is that of promoting the

science of surgery :—and in order to prevent any misconception it may be here stated that with exceptions, hereafter adverted to, the qualification for the elective franchise is intended to be twofold, namely, 1st, the practising surgery exclusively,—2nd, the degree and title of *Fellow*.”* 62.

The candidate for the fellowship—1st. Should have attained at least twenty-four years of age, though the great and undeniable advantage of a lengthened education are such that the age of twenty-six years would be doubtless a preferable qualification :—2nd. Should have graduated in *Arts* at one of the British Universities, or should show by an examination for that purpose a due proficiency in those branches of study, which that graduation implies, though the Metropolitan Colleges now offer all the requisite facilities for providing the qualification proposed :—3rd. Should be provided with sufficient testimonials of his *moral character* and conduct :—4th. Should be subjected to *examinations* for ascertaining his professional qualifications, which might consist, 1st, Of his acquaintance with the writings of those authors, who mark the great epochs of the *history* of medicine; 2, In *Anatomy* and in *Physiology*, human and comparative;—3, *Pathology*;—4, *Therapeutics*, especially surgical, or what is commonly called the practice of surgery. Moreover he should be required to have occupied six years in his professional education, during a considerable portion of which period he should have attended a hospital, and have treated a certain number of surgical cases;—and he should be required to furnish a series of *clinical reports*.

A Fellow may practise pharmacy or midwifery, but then he could not be an elector of the council. General practitioners who had passed the higher examinations might constitute a class of *Honorary Fellows*, who, showing that they no longer practised pharmacy or midwifery, might claim the privilege of their fellowship.

The *College of Physicians* would be more efficient (Mr. G. does not touch upon its constitution) if its jurisdiction over the practitioners of physic embraced England and its dependencies, in licensing those duly qualified, and in protecting the community from the intrusion of uneducated and dishonest pretenders to medical skill and knowledge.

A Midwifery Board.—There would be no difficulty in selecting persons of ability and influence, who might constitute a board for determining the qualifications of those desirous of obtaining a license to practise obstetric medicine, or of those who require it as an additional qualification, and intend to become *Licentiates* in medicine, surgery, and midwifery.

The Society of Apothecaries.—“ Perhaps the omission of any distinct board of *General Practitioners*, corresponding to the Society of Apothecaries, cannot be wholly passed over without some notice. It is, however, evident that any board

* We have heard, we should think the rumour childish, that the College of Physicians have objected to the title of Fellow of the College of Surgeons. They might just as well object to Fellow of the Royal Society, or of the Antiquarian Society, or to the respectable body of *Odd Fellows*. The thing is too absurd to be credited.

for examinations, would be wholly unnecessary, as those described above include the requisite means for determining by those best qualified by their education and attainments, the qualifications of candidates; and we repeat that any separate board would be unnecessary, notwithstanding that we cheerfully admit that the amelioration and improvement of the education of students in London has been mainly owing to the regulations of the Society of Apothecaries. But we see likewise a great evil in the establishment of any separate corporation or governing body for this professional class; and we cannot but think that the general practitioner himself must on reflection see the injurious tendency of any institution, which would be likely to alienate him from those bodies, the character of which tend to give him rank and estimation, and the constitution of which ought to provide inducements and facilities, as is the case in the projected class of Honorary Fellows of the College of Surgeons, for the continual ascension of the general practitioner into the higher grades of the profession, wherever his talents and attainments qualify him for it. It must be likewise remembered that if any such board were established, it must consist of those General Practitioners who live in London. Now in respect of the higher departments of the profession, it is abundantly clear that those of the greatest attainments will be found in the great metropolitan mart of fame and fortune; but for that very reason, the pre-occupation of the posts of honor, namely, it is most likely, as indeed is the fact, that in the class of general practitioners those most eminent in practice, and the most sedulous cultivators of their profession as a science will be found elsewhere than in the metropolis. How little too any hope of founding such an institution in London, in accordance with the requirements of a liberal profession, can be entertained,—will be found in the fact that no feasible means have been, or can perhaps be, devised of separating it from the city guild and *trading company of Apothecaries*. If indeed the medical examinations of general practitioners were conducted by the College of Physicians, and some of the most eminent of the class of general practitioners were selected as *assessors*, it might be with the especial duty of conducting the *pharmaceutical* part of the examination, and the change might be hailed as conferring a legitimate distinction on the individuals, and calculated to exert a beneficial influence prospectively on this indispensable class of the profession. We would wish that a rank and character should be secured to the general practitioner, as a member of a liberal profession, which will be cheerfully conceded to many individuals no less eminent in practice than honourably known as sedulous cultivators of science, but which cannot be granted to them as a body, except under the conditions of an enlarged education, and of the entire separation of their pursuits from any admixture with *Trade*." 70.

Such are the opinions of Mr. Green on Medical Reform. We disclaimed any intention of stating our own views, and conclude, therefore, by recommending those of our author to the candid judgment and criticism of our readers.

ON THE NATURE AND TREATMENT OF STOMACH AND URINARY DISEASES: BEING AN INQUIRY INTO THE CONNEXION OF DIABETES, CALCULUS, AND OTHER AFFECTIONS OF THE KIDNEY AND BLADDER, WITH INDIGESTION. By *William Prout*, M.D. F.R.S. Fellow of the Royal College of Physicians. Third Edition, much enlarged. London: John Churchill, 1841.

[Second Notice.]

THE portion of Dr. Prout's able work which treats of the Diseases of the Stomach and Urinary Organs is divided into two books, the first treating of Functional Diseases, the second of Mechanical Diseases.

OF FUNCTIONAL DISEASES.

This Book is divided into Five Chapters, comprising the following subjects.

CHAP. I. General observations on the Pathology of Aqueous assimilation and secretion.

Of an Excess and Deficiency of urine.

CHAP. II. General observations on the Pathology of Saccharine assimilation and secretion.

Section *a.* Of Saccharine urine. *Diabetes.*

b. Of Oxalic acid; Oxalate of Lime.

c. Of Lactic acid.

CHAP. III General observations on the Pathology of Albuminous assimilation and secretion.

Section *a.* Of an Excess and Deficiency of Urea.

b. Of Albuminous urine.

c. Of Lithic acid.

d. Of Cystic oxide.

CHAP. IV. General observations on the Pathology of Oleaginous assimilation and secretion.

Section *a.* Of an Excess and Deficiency of fat.

b. Of Cholesterine and its deposits, &c.

CHAP. V. General observations on the Pathology of the Incidental Mineral matters entering into the composition of organised bodies.

I. GENERAL OBSERVATIONS ON THE PATHOLOGY OF AQUEOUS ASSIMILATION AND SECRETION.

Dr. Prout adopts the old distinctions of *urina potús*, the urine voided after drinking, and moderate eating, which, however, he prefers calling the *urine of assimilation*—and *urina sanguinis*, that liberated from the blood, after the primary processes of assimilation have been completed.

Fluids, observes Dr. Prout, taken into an empty stomach usually soon find their way to the kidneys. If, therefore, for any purpose, we wish to produce a large flow of urine, we ought to administer fluids when the digestive processes are quiescent; as, by giving them at such times, we are not only more likely to effect our purpose, but avoid the risk of deranging the assimilating processes. The same remark applies to the employment of mineral waters, especially mineral waters of low powers, and requiring to be taken in large quantities. The same cautions with regard to the time of administration, are applicable to those mineral waters which are strongly impregnated with neutral saline matters, and which chiefly exert their effects on the bowels as purgatives. Such waters should be taken at periods when they are least likely to interfere with the assimilating processes; otherwise they often do more harm than good.

Farther on, Dr. Prout adverts to the circumstances that attend the appropriation of water. This is gradual. Thus the alimentary matters, during their *reduction* into chyle, are gradually and slowly combined with water; and that, on the other hand, the chyle, during its conversion into blood, is gradually *raised* or separated from its associated water. The supply of water, therefore, must be duly regulated.

"In the healthy condition of the stomach and of the system in general, when a *natural* thirst indicates the want of drinks; fluids taken into the stomach, even during the digestive processes, interfere with these processes much less than might be expected; for, by a beautiful provision, the superfluous portion of the fluids is removed from the stomach almost as fast as it is introduced. The fluids thus removed, however, are liable to be occasionally charged with unassimilated crudities, which, in subsequently passing through the kidneys, produce more or less derangement of these organs. On the other hand, when fluids are taken into the dyspeptic stomach during the digestive processes, they are apt to be retained; and after giving occasion to flatulent distension, and to many other annoying symptoms, they are either tardily taken into the system, and thrown on the kidneys loaded to excess with unassimilated matters; or they sometimes escape by the bowels; or are ejected by vomiting. Hence, as a general rule, the impropriety of drinking too much during a meal." 9.

The *urine of assimilation* is exceedingly variable in its properties. Generally it is more or less dark-coloured, above the average specific gravity, and becomes turbid on cooling, from a deposition of lithic acid; or from a mixture of lithic acid with various other matters, some of which have been taken into the stomach as food, and have passed through the system unchanged, more particularly in dyspeptics. The *urina sanguinis*, voided long after food has been taken, is the standard urine, and shews more particularly the condition of the kidneys and of the system in general. So, in examining the urine, two specimens are required; viz. the urine voided after a principal meal, as after dinner; and the urine voided in the morning before breakfast; from which two extremes we may generally obtain all the information that the urine is calculated to furnish.

Dr. Prout observes that *excess* or *deficiency of urine*, considered in reference to disease, mark opposite conditions of the system—the former constantly accompanying those complaints connected with a peculiar state of nervous irritability—the latter usually waiting on an inflammatory state of the system.

II. GENERAL OBSERVATIONS ON THE PATHOLOGY OF SACCHARINE ASSIMILATION AND SECRETION.

Dr. Prout has long paid great attention to this class of disorders, and it still occupies his mind. He reminds the reader: *first*, that saccharine aliments cannot in their natural state form constituent principles of living animal bodies, but must previously undergo certain changes of a more radical character than either of the other primary alimentary principles. *Secondly*, that such conversion of the saccharine aliments is a distinct function, among the earliest to exist and among the last to be extinguished. *Thirdly*, that this function is twofold, primary and secondary. *Fourthly*, that the gelatinous tissues may be regarded as the representatives of the original saccharine aliments. These considerations afford a clue to the following points, which Dr. Prout treats of seriatim.

1. That both the primary and secondary assimilating processes are liable to be deranged, not only in degree, but in kind; and that the derangement of one of the classes of assimilating processes necessarily more or less involves the other. 2. That one of the derangements of the primary assimilating processes consists in the want of power to assimilate certain forms of the saccharine principle, (e. g. sugar;) while another derangement of the same processes consists in the imperfect or mal-assimilation of the saccharine principle, by which various unnatural bodies, e. g. oxalic acid, lactic acid, &c. are produced instead of albuminous matters. 3. That the derangements of the secondary assimilating processes resulting from, or connected with, the derangements of the primary assimilating processes above mentioned, consist in the imperfect development of the living animal tissues, and particularly of the gelatinous tissues; and that, during the further changes which such imperfectly developed tissues undergo, various unnatural and poisonous matters are generated, the nature of the greater part of which is unknown to us; though among them there appear to be occasionally included matters similar to, or identical with, those matters, developed during the primary assimilating derangements, viz. oxalic acid, lactic acid, &c. 4. And lastly, That the causes producing derangements, both of the primary and secondary assimilating functions, are partly innate, and consist in a peculiar predisposition to such derangements; and partly exciting, and consist in exposure to accidental circumstances to which all individuals are subject; such as depressing passions of the mind; a residence in certain unhealthy localities; long-continued errors in diet, &c.

1. It can easily be conceived that the primary assimilating functions may be disordered, and that their derangement will disturb the secondary. On this we need not dwell.

2. That the primary assimilating organs are, under some circumstances, unable to assimilate the saccharine principle is evident from the fact that, in diabetes, sugar has been repeatedly ascertained to exist in the sanguiferous system; a fact unequivocally demonstrating that the assimilating organs had failed to convert the saccharine aliment into the constituent principles of the blood.

In diabetes, says Dr. Prout, the function by which the saccharine principle is converted into the constituents of chyle, is suspended or destroyed. In

other diseases, however, this important function is not destroyed, but *erroneously exerted*; and the consequence is, that many principles, some of them of a poisonous character, as, for instance, the oxalic acid, are developed from the saccharine principle during the assimilating processes. That oxalic acid *must* be occasionally developed in the system is evident from the fact, that this acid is found in the urine when it has not been taken into the stomach. Now, when we consider that oxalic acid, taken into the stomach, passes through the kidneys unchanged; and that those who take sugar in excess are often liable to oxalate of lime concretions; there can be little doubt that the oxalic acid found in the urine is occasionally developed in the primary assimilating organs, and most probably in the stomach itself.

3. There is reason to believe that, in the advanced stages of diabetes, sugar is developed during the secondary assimilation of the gelatinous, perhaps of the albuminous and oleaginous tissues. Nor can it be doubted that the converting function of the secondary assimilating processes is liable to be *erroneously exerted*, and to give birth to various unnatural products. Dr. Prout advances the following considerations to establish the probability of the oxalic and lactic acids being included among them.

"It will be shown hereafter, that the oxalic acid in small quantity occasionally passes through the system, without producing any remarkable external symptoms of its presence; it will be also shown, that in many other instances the presence of oxalic acid in the system is accompanied by certain cutaneous and other diseases more immediately connected with the gelatinous tissues. Now, although we cannot *prove* that the oxalic acid in the latter case is the result of the same derangements of the secondary assimilating processes which give immediate occasion to the cutaneous affection; yet when, in addition to the preceding facts, we further take into account the relation of the gelatinous to the saccharine principle; no supposition appears more probable, than that *one* of the derangements of the secondary assimilation of the gelatinous principle may consist in the development of oxalic acid. But if this reasoning be deemed inconclusive with respect to the development of the oxalic acid during certain derangements of the secondary assimilating processes; its validity, perhaps, will scarcely be questioned with respect to the development of the lactic acid during certain other derangements of the secondary assimilating processes; for on what other supposition can we explain the presence of those enormous quantities of lactic acid which occasionally exist in the system during rheumatic and hectic fever? Will any one contend that all this lactic acid is, in such instances, developed in the stomach?" 18.

Among the other unnatural principles occasionally developed from the saccharine, or from the gelatinous tissues, Dr. Prout thinks we may enumerate many matters generated in the miasmatic and contagious fevers of tropical climates, and even of our own. He refers to the *black vomit*, which is often powerfully *acid*. He thinks, too, that organic diseases in general, but particularly those of a deep-seated and malignant character, appear to be more frequently connected with derangement of the gelatinous, (i. e. of the saccharine,) than of either the albuminous or oleaginous radicals.

4. Dr. Prout makes some remarks on the *causes* of mal-assimilation of the saccharine principle.

The internal *predisposing* causes are generally innate or inherited. Previous attacks, too, predispose to fresh.

Among the external *exciting* causes, one of the most frequent is exposure

to cold, and especially to *cold and moisture*. And Dr. Prout thinks that *malaria* has a good deal to do with diabetes. Perhaps the following observations may be considered as bordering a little on the fanciful :—

“ Every one is acquainted with the familiar fact, that the most frequent and striking morbid appearances presented by the urine from slight causes, (such as a cold, indigestion, &c.,) are the common lateritious sediments. Now, the first circumstance that attracted my notice after the prevalence of the Asiatic cholera, was the disappearance of these sediments from the urine. The absence of these sediments was at first considered to be accidental ; but when, day after day, the same occurrence took place, I was induced to inquire attentively into the circumstance, with the view, if possible, of ascertaining the reason. On closer inspection, it was found that the urine of every individual examined, whether in apparent health or otherwise, not only presented the same absence of sediment ; but also assumed that peculiar appearance, which I had been accustomed to consider as characteristic of the presence of oxalic acid. As I had always previously found the oxalic acid diathesis of unusual occurrence in London, I was much struck with the phenomenon ; and on reflection it occurred to me, that it might be referable to the same unknown cause which was then producing cholera. I was led to this notion from the analogous effects above mentioned produced in the urine by malaria ; and also by another curious fact, noticed below, which likewise took place about the time the Asiatic cholera first made its appearance, viz. a positive increase in the weight of atmospheric air, similar to what might be supposed to be produced by the diffusion of a heavy gaseous principle through the lower regions of the atmosphere. My conclusion therefore was, that the cause of the phenomenon in question, as well as of the cholera, was a poisonous body analogous to malaria, whose high specific gravity and feeble diffusive powers kept it near the earth’s surface, along which it insensibly crept, particularly in low and damp situations. Whether this conclusion was legitimate or not, others must decide. I do not think the point worth contesting ; but shall briefly mention the following additional facts, connected with the subject.

During the prevalence of the above condition of the urine, I likewise noticed, in almost every individual, an unusually acid state of the saliva, and of the cutaneous exhalations ; such as I had never, indeed, before noticed, except in the last stages of chronic diseases ; or in malarious affections. Besides these circumstances, I also saw, about the time the cholera prevailed, and a little afterwards, more cases of oxalate of lime renal calculi, and of formidable hæmorrhage from the kidneys, &c., than I had ever previously seen during the whole of the long period that urinary diseases had occupied my attention. As the cholera disappeared, the above state of things gradually subsided ; but I have sometimes imagined that the urine has never completely recovered its former condition. Indeed, during the last winter and spring, lithic acid deposites were comparatively rare in London ; and the urine assumed much the same appearance as during the prevalence of cholera, though in a less marked degree.” 23.

At the period in question, people generally were particular in their diet, ate more animal food than usual, or, at all events, less vegetable food, and, probably, consumed more brandy and port. Whether this had any thing to say to the condition of their urine we leave to Dr. Prout to determine.

Among the remote causes of saccharine derangements, may be mentioned diet. A free consumption of sugar predisposes to saccharine diseases, as well as to the oxalic acid diathesis. So do the sorrel and rhubarb plants, and Dr. Prout reprobates the rhubarb puddings and pies of Spring. Of *tobacco* he speaks in the unkindest terms.

“ Tobacco disorders the assimilating functions in general, but particularly, as

I believe, the assimilation of the Saccharine principle. I have never, indeed, been able to trace the development of oxalic acid to the use of tobacco; but that some analogous and equally poisonous principle (probably of an acid nature) is generated in certain individuals by its abuse, is evident from their cachectic looks; and from the dark, and often greenish yellow tint, of their blood. The severe and peculiar dyspeptic symptoms sometimes produced by inveterate snuff-taking are well known; and I have more than once seen such cases terminate fatally with malignant disease of the stomach and liver. Great smokers also, especially those who employ short pipes and cigars, are said to be liable to cancerous affections of the lips." 24.

We hope our smoke-producing youth will attend to this.

Of Diabetes.

Dr. Prout, to prevent confusion, proposes to restrain this term to affections in which the urine is *saccharine*—designating an excessive flow of urine unattended with sugar—*Diuresis*.

The specific gravity of diabetic urine has been stated to vary from 1.020 to 1.050. But Dr. Prout has once or twice seen it as low as 1.015 and often as high as 1.055, and higher. The quantity of urea is sometimes much diminished, though Dr. P. has never seen it absent; and, in some instances, urea is said to exist in diabetic urine in greater proportion than natural. Lithic acid also is usually found in saccharine urine in greater or less quantity; and in favourable cases of the disease, the quantity of this acid is often very considerable. The usual saline matters existing in the urine are met with in diabetic urine in nearly the same *relative* proportions as in health; but the *absolute* quantity of saline matters, viewed in relation to the quantity of urine passed, is much diminished. Sometimes diabetic urine contains a little blood; and not unfrequently albuminous matter, analogous to that of chyle.

Dr. Prout gives the following hint for ascertaining the period when the disease commenced.

"The commencement of diabetic attacks can seldom be accurately determined; but by inquiring minutely as to the period when the urine *was last observed to be turbid*, I have several times traced attacks very nearly to their origin. In such instances, patients have usually stated, that at some former period, the continued turbidity of the urine was such as to attract their observation; and on being questioned as to the supposed cause of such turbidity, some have ascribed it to exposure to cold; others to an attack of gout or rheumatism; others to disordered health from mental anxiety; &c. In most instances, the cessation of this turbidity was not accurately noticed; in a few, the termination was observed to take place rather abruptly; and the urine, on becoming clear, was likewise observed to become increased in quantity. Now it is probable that at the time the urine became clear, its saccharine condition commenced, or at least became confirmed; though, in general, the increased flow of urine was not so great, as to attract the patient's attention for several weeks; sometimes for several months, after this period." 29.

Dr. Prout gives a succinct account of the symptoms and progress of the malady; and comments on some of the former.

Thirst is worst in those who drink most. The skin is occasionally *moist*. There is, in some instances, inflammatory redness at the external orifice of the urethra; and sometimes phymosis.

Emaciation is not an absolutely constant symptom. Dr. Prout attended one patient who weighed twenty-three stone and a half, and another who weighed upwards of seventeen stone. He states that he knew a gentleman who long laboured under confirmed diabetes, and who recovered so far as to marry and to have two children; though the saccharine condition of the urine never left him. Indeed a saccharine condition of the urine exists in dyspeptic and gouty individuals much oftener than is supposed; and hundreds pass many years of their lives, with this symptom more or less constantly present, who are quite unaware of it, till the quantity of urine becomes increased.

Terminations of Diabetes.—"Phthisis, as already stated, is the most frequent. Besides phthisis, however, I have seen diabetes prove fatal by disease of the liver and jaundice; by apoplexy; by a peculiar affection of the stomach, brought on by improper food, or by over-distension; by acute gastritis induced by taking cold fluids when heated; by inflammatory fever excited by exposure to cold, and rapidly assuming the typhoid character; &c. Occasionally diabetes is said to terminate in incurable dropsy, and in various other affections. In short, a great many circumstances, which would not affect a sound constitution, often prove fatal in this disease. Hence a diabetic individual may be considered as existing on the brink of a precipice; and the general prognosis must be always unfavourable." 34.

Causes.—The lower animals seem to be exempt from diabetes—a curious, if a correct fact. A *predisposition* to the disease is more frequently inherited than acquired. Dr. P. has seen more cases of diabetes in individuals of the sanguine temperament with light or reddish hair, than in any other. The disease, however, occurs in all temperaments; and perhaps next in frequency to the sanguine, in the melancholic temperament. In strumous individuals, with dark hair and eyes, fair skin, &c. diabetes often assumes its most unmanageable and fatal form. Diabetes is less frequent in women than in men; and rarely occurs in infancy or in old age, though there is a modification of it in infancy, described by Dr. Venables. Yet a predisposition may be acquired by a residence in a cold and damp situation, or in a malarious district, particularly if at the same time conjoined with a poor and unwholesome diet, or the too free use of sugar, &c.; also by venereal excesses; by the abuse of mercury; and, in short, by any cause having a tendency to sap the foundations of organic life; and more especially of the processes of assimilation.

The most frequent *exciting* causes that Dr. Prout has seen, have been exposure to cold; attacks of rheumatism and of gout; the drinking of cold fluids while heated; mental anxiety or distress arising from a variety of causes, such as a sudden reverse of fortune, &c. But others have blamed cider, injuries of the back, affections of the skin and cellular tissue.

"Were I permitted to draw a general inference from my experience, I should say, that diabetes usually *follows* cutaneous affections; and accompanies (perhaps *precedes*) the affections of the cellular tissue. Thus I have several times heard patients observe, that they were formerly subject to eruptions in various parts of the body, but that such eruptions disappeared after the diabetic complaint became established; nor do I remember more than one instance, in which diabetes actually accompanied a severe cutaneous affection. On the contrary, diabetes very frequently, (as far as my personal experience goes,

always) accompanies carbuncles, and malignant boils or abscesses allied to carbuncles. This is a fact mentioned by several of the older writers; and is of great importance to surgeons, who usually have the management of these affections." 36.

Dr. P. mentions a case in point. He thus states the *proximate cause* of diabetes;—

"When *crystallised* sugar is taken into the stomach by a diabetic individual, it is reduced to a *low* state, remains more or less unassimilated, and passes through the system to the kidneys, by which organs (being already crystallisable) it is separated unchanged.

When *organised* saccharine principles, as farinaceous matters, &c. are taken into the diabetic stomach, they are in the first place reduced to the form of *low* sugar; part of which low sugar is assimilated as in the healthy stomach; while another part is modified or remains unassimilated. The portion that is assimilated is applied to the purposes of the economy: the portions modified and unassimilated pass together through the system to the kidneys, by which glands, the portion modified is disorganised, and finally appears in the urine as crystallisable sugar, along with the portion originally remaining unassimilated in the stomach. The same remarks are applicable to gelatinous, and in extreme cases, perhaps, to albuminous and oleaginous aliments. The *secondary* assimilating processes in diabetic individuals participate in the derangements of the primary processes just detailed;—that is to say, the gelatinous tissues are either reduced to sugar, and thus not assimilated at all; or they are imperfectly assimilated; or they are mal-assimilated; in all which conditions, the saccharine principle derived from the gelatinous and other tissues, may be supposed to pass through the system to the kidneys: by which organs, like similar matters brought from the stomach, the various modifications of the saccharine principle are further disorganised, and converted into crystallisable sugar."* 37.

Dr. Prout enumerates the favourable and unfavourable symptoms in diabetes. Among the *favourable* may be enumerated, a moderate flow of urine of a specific gravity not higher than 1035; the appearance in the urine of lithic acid either in its amorphous or crystallised form; the recent appearance of the disease, and absence of thirst; the retention or gain of flesh and strength; and more than all, immunity from organic disease, more especially from organic disease of the lungs. On the contrary, when the flow of urine is permanently excessive, and of high specific gravity; or when this secretion is pale coloured, opalescent, and serous; when the thirst, emaciation, and debility are extreme; or when organic disease, particularly of the lungs, is present, the chance of recovery is much diminished. But when, as is too frequently the case, several, or all of these unfavourable symptoms co-exist; the chance of recovery is not only diminished, but *absolutely hopeless*.

The *post-mortem* appearances in diabetes are too inconstant to permit us to consider them as more than concurrent or consequent affections. The most frequent appearances which Dr. P. has noticed have been rather of a

* "These views seem to be almost demonstrated by the important observations of Mr. M'Gregor, before alluded to. Mr. M'Gregor found that sugar is not only developed from vegetable and animal matters in the stomach; but that it exists in the blood, saliva, &c. and even in the alvine evacuations of a diabetic patient."

chemical character:—First, an enlarged, flaccid, and occasionally a congested state of the kidneys; a section of which organs, when first removed from the recently dead body, has usually assumed, on exposure to the air, a peculiar deep orange-red tint, difficult to be described; Secondly, a gorged condition of the veins terminating in the portal system, particularly of the veins of the mesentery; and an unusually dark-coloured and fluid condition of the venous blood throughout the assimilating organs; Thirdly, but not so constantly, a vascular state of the mucous membrane of the stomach, and upper portion of the alimentary canal.

Treatment.—The principle inculcated by Dr. Prout is this—Diabetes is a form of dyspepsia; and it ought always to be considered in a twofold light; as a simple saccharine condition of the urine, without any increase in its quantity, and as complicated, with a preternatural flow of that secretion. But, at present, the only means we possess for improving the quality of the urine are remedies that lessen its quantity.

Diet is the great thing. Dr. Prout does not approve of one exclusively animal, but considers a certain proportion of farinaceous matters proper. The ratio must vary with the assimilating powers of the patient. Of farinaceous matters, the *high* or *strong*, as the farina of wheat in the shape of bread, &c., seem to be most easily assimilated. The *low* kinds of farinaceous matters, as arrow-root, potatoes, &c., (with the exception perhaps of rice,) seem to be reduced to a species of sugar, more difficult of assimilation than the sugar from wheat-flour, &c., and in general, therefore, should be avoided. Every variety of the saccharine principle in its *crystallisable* form, is absolutely inadmissible as an article of food in diabetes. This rule excludes therefore, at once, all fruits, whether subacid or sweet; as well as every compound, natural or artificial, into which sugar enters. Dr. P. has known a few pears undo, in two or three hours, all that had been gained in months. Allow no latitude to patients. Like Dr. Johnson they can abstain, when they cannot be abstemious.

And *quantity* should be attended to. As a general rule with respect to diet, it may be said that a quantity, greater or less according to circumstances, but always strictly regulated, should be taken at periods of four, five, or six hours; and that at the time of taking solid food, and for an hour or two afterwards, all fluids should be abstained from as much as possible. Dr. P. would say that mutton or beef, plainly cooked, and particularly mutton-chops or beef-steaks, rarely done, should be taken twice in the twenty-four hours; and that the other meals should consist of any simple article that can be prepared from farinaceous matters with milk, eggs, &c. only. Sometimes oleaginous matters, more particularly butter, agree well. When the reducing function is impaired, as happens in a few instances, a system of diet less solid, and consisting of animal matters reduced to the pulpy state by stewing after the French fashion, will be more appropriate.

The management of drinks is as important as that of solids. A certain indulgence must be allowed.

"The Bristol Hotwell, and other waters containing carbonate of lime in solution, have been long celebrated in diabetic affections; and, as Dr. Marsh observes, they appear to quench the thirst in those affections better than most other mere diluents. Allied to these are waters artificially impregnated with

lime or magnesia; as lime-water, which, either alone, or with milk, has been a favourite remedy in diabetes with some writers; the same may be said of water containing magnesia held in solution by carbonic acid, &c. Waters containing fixed alkalis, and their salts, are generally too diuretic in their effects to be recommended in this affection; yet when saturated with carbonic acid gas, and held in the mouth for a few seconds without swallowing them, they often remove or mitigate thirst better than most other fluids. All the stronger saline waters, from their diuretic proportions, should be carefully avoided. As a simple diluent, I am disposed to think very highly of distilled water. The use of water, however, in all its forms, should be sparingly allowed, as it is exceedingly liable to be abused; and various animal decoctions, milk, &c.; should be taken instead. When the patient has been in the habit of taking fermented liquors, I have been accustomed for some years past to recommend sound porter in preference to wine or spirits. The *quantity* must be determined by the circumstances of the patient; but the minimum quantity should be rarely surpassed. With very few exceptions, I have seen more relief from thirst, and more support given by porter in diabetic cases, than by any other means whatever. As general rules, also connected with the subject of fluids, it may be observed; first, that as the sudden abstraction of fluids in diabetic cases is sometimes followed by unpleasant consequences, the quantity should be *gradually* diminished; secondly, that in order to induce the patient, whose craving is generally after *cold* drinks, to take as little as possible, all fluids should be recommended in a *tepid* state; and lastly, that fluids should be taken at those periods in preference to others, when the stomach is not loaded with solid food." 45.

The *remedial treatment* must be conducted on general principles. Blood-letting is useful at the commencement. *Purgatives* Dr. P. has only found of use, as simply regulating the bowels, and he excludes the saline class, with the exception of phosphate of soda. *Sudorifics* are important.

Dr. Prout speaks highly of *opium*. Yet he believes that they who have stated that it *cures*, have over-praised it. Dover's powder is usually the best form, but it may agree worse than other preparations.

"Sedatives are often advantageously combined with astringents and tonics in the chronic forms of diabetes. Thus, opium may be associated with tannin, or with its modifications, catechu and kino; also with the mineral acids, and particularly with the sulphuric acid, either alone, or in combination with quinine, iron, zinc, copper or alumine. I have occasionally had recourse to all these combinations; but in general have preferred the supersulphate of quinine or of iron; and at the same time made it the rule to do with as little opium as possible. The blue phosphate, and the carbonate of iron, are also excellent remedies. Of the phosphate of iron in particular I am disposed to think very favourably; but I have been disappointed with the use of phosphoric acid; which has not in my hands produced the good effects some have ascribed to it; even when very freely and perseveringly administered." 48.

When diabetes is complicated with other diseases, *they* must be considered in *its* treatment. This is necessary more particularly in its early stage. Such a complication is frequently hepatic disorder or disease, and this leads our author to make some observations on *mercury*. He deprecates its abuse—the indiscriminate and destructive calomel and black-draught system, which, though in its glory twenty years ago, is by no means obsolete now. Dr. Prout lays down these maxims for its use.

First, Mercury ought in no instance to be administered for those slight deviations from health which can be readily removed by safer expedients.

Secondly, Mercury ought to be cautiously administered to strangers; and to those on whose constitution its effects have not yet been ascertained.

In the following observations we perfectly concur, and, indeed, we are in the habit of putting the case in this very manner to our own patients. We wish all medical men and the public would take the same rational views.

"The stimulating effects of mercury may be analogically illustrated by the stimulating effects of dram-drinking. As the stomach accustomed to ardent spirits will scarcely tolerate any weaker beverage; so the liver, accustomed to the stimulus of mercury, will hardly respond to any other influence. Those, therefore, who in early life have on all trivial occasions resorted to the powerful stimulus of mercury, like early dram-drinkers, are usually obliged to persist in the baneful habit. The truth of this analogy will be scarcely questioned: for the most superficial observer must have noticed, that patients who habitually take calomel are more than ordinarily subject to periodical congestions, or *biliary* attacks as they are termed; and that such biliary attacks will rarely yield to any other remedy than calomel. Nor is the insensibility to gentler expedients, thus too often produced in the soundest constitutions by the use of mercury, its only fault; the habitual use of this remedy is capable of exerting positive mischief on the assimilating functions and on the kidneys of some individuals; as will be shown in subsequent parts of this volume. Moreover, those who are under the influence of mercury in a degree far short of salivation, are notoriously liable to take cold, rheumatism, &c., from slight exposure; and various formidable and fatal diseases, as phthisis, &c., can be often distinctly traced to such exposure under the influence of mercury." 51.

Mercury is a very proper medicine when there is a disease for which it is appropriate, to combat, and the patient's constitution is adapted for it. In many chronic diseases mercury is beneficial, but not in the ratio of the largeness of the dose. Our author has never seen mercury do good in diabetes; almost invariably it has been mischievous. This mischief has been displayed in various ways connected with the urinary secretion; that is to say, the specific gravity of the urine has been increased; or the secretion has become serous, or otherwise deteriorated. Moreover, when the effects of the mercury have ceased, the patient has usually become worse than before; and the disease, after assuming its most unfavourable form, has rapidly advanced to its fatal termination. Nay, when the disease has been partially got under, he has seen a few grains of blue-pill inadvertently given, in the short space of a day or two, double and even triple the quantity of urine; and thus the benefit, to obtain which perhaps months had been required, has been lost as it were in a moment, and the patient has been reduced to a worse state than he was in at first.

Dr. Prout is inclined to limit the use of mercury in diabetes to the following cases:—First, general inflammatory or phlogistic fever; Secondly, acute or chronic inflammation of the liver; and Thirdly, the temporary congestion apt to occur in those individuals, who have been long accustomed to the stimulus of mercury.

1. Acute inflammation is rare in diabetes. When such does follow exposure to cold, the acute stage is of brief duration and rapidly passes into the adynamic form, with a disposition in the inflamed parts to become gangrenous. The acute stage of such attacks therefore is so transient, that it usually disappears before medical advice can be obtained; otherwise, if promptly met at the very beginning by free abstraction of blood, and the

judicious application of calomel and opium, there is a chance that the progress of such attacks may be arrested. But if the peculiar adynamic state become once established, no treatment seems to avail.

2. Our author has seen chronic inflammation of the liver with congestive enlargement and jaundice, and too frequently organic disease, accompany diabetes. In the treatment of complications of this nature, the rule to be attended to, is to do everything in the first place that can be done by the aid of other expedients; so as to leave that only to be done by mercury, which mercury alone will accomplish. General and local activity, therefore, should be reduced as speedily and effectually as possible, by the abstraction of blood, by blistering, and by other well-known expedients; and when these means have effected all they are capable of doing, the aid of mercury may be resorted to. The peculiar circumstances of the case must, in some degree, determine the mode of employing this active remedy; but in general as little as possible should be given internally, and the form of inunction, plasters, &c., should be preferred. When given internally, mercury should, for the most part, be conjoined with opium; and of the different preparations of the drug, perhaps calomel so associated constitutes, on the whole, the least objectionable mode of administration.

3. The occasional use of alterative doses of mercury, either combined with sedatives or with mild purgatives, or with both, according to circumstances, is beneficial in some constitutions; and particularly in those who have always from early life been previously accustomed to the stimulus of mercury.

The principles of treatment, which have been detailed, being adhered to, Dr. Prout has seen a few cases in which the saccharine quality of the urine has entirely disappeared; and a very great number of cases, in which the symptoms have been so far subdued as to give little trouble to the patient. But the latter must consider himself through life an invalid, and submit to the restrictions and employ the care which such a state demands.

Diabetic Diuresis in Young Children.

In young children, says Dr. Prout, as in adults, diuresis is a symptom of very different forms of disease; in all these diseases the urine, as well as being excessive in quantity, is more or less unnatural. Thus in infantile diuresis the urine almost always contains albuminous matters. In other instances an excess of the urea, or of the phosphates, is present; while in a few cases saccharine matters, more or less perfectly developed, exist either alone, or in conjunction with the above or other unnatural ingredients.

“The saccharine diuresis of young children usually commences soon after the period of weaning. From having been up to that time healthy, the child begins to get dull and inactive, and to daily lose flesh. The skin also becomes harsh and dry, and feels hotter than natural. As the disease proceeds, the bowels become irregular, and the motions assume an unnatural, often greenish appearance; the abdomen also usually becomes prominent, so as to lead to the suspicion of mesenteric disease. The pulse is quick, and denotes great irritability. In connexion with these symptoms, the quantity of urine begins to gradually increase, at first so slowly as to escape notice; but at length the quantity becomes so great, and the accompanying thirst so urgent, that these circum-

stances can no longer be overlooked. The urine is sometimes quite limpid; at other times of a pale straw or greenish colour; sometimes opalescent or milky. The specific gravity fluctuates considerably even in the same individual; and though it often falls within the diabetic range, the specific gravity seldom reaches the high point of the diabetic urine of adults. From the almost invariable presence of albuminous matter more or less perfectly developed, and which acts as a ferment, the diabetic urine of children is apt to undergo rapid changes from saccharine or acetous fermentation, or from both; and soon begins to emit an odour somewhat resembling sour milk.

This disease occurs most frequently in the children of profligate, dyspeptic, and gouty individuals, more especially in large towns; while the immediate exciting causes in such predisposed individuals are commonly want of air and proper nourishment; or injudicious management. The disease is of a formidable nature, and generally proves fatal; particularly if its nature be overlooked at the outset; and it be in consequence improperly treated. The treatment consists, in the first place, in removal to a purer air, or to the sea; and in the employment of a regulated and nutritious diet, consisting, as far as the tender age of the little patient will admit, of animal matters; at least, sugar and all sweet articles should be avoided. The state of the bowels should be attended to; and while calomel purges should be most carefully shunned, some gentle alterative, as the *hydrarg. cum creta*, combined with rhubarb and magnesia; or the carbonate of soda, calumba, &c. may be often given with advantage. The warm sea bath, with friction upon the skin, &c., will be also useful. The quantity of fluid taken should be strictly limited; and in addition to the other means, such tonics as appear to be suited to the age and circumstances of the patient, may be given with advantage. Dr. Venables, who first drew attention to this disease in children, recommends the use of the blue phosphate of iron; and this or the carbonate of iron, combined with a little magnesia or calumba, is often highly useful." 58.

Of the Oxalic Acid Diathesis.

When oxalic acid is produced in the system, the urine is generally transparent, and remarkably free from sediments; of a pale citron-yellow, or greenish, hue; and of moderate specific gravity; that is to say, the specific gravity usually oscillates about 1020 as a mean point, but is often less than this—a circumstance chiefly referable to variations in the quantity of the urine secreted; which is frequently above the healthy standard.

These properties of the urine may induce suspicion, but judgment must not be definitely pronounced on them.

The symptoms are rather of the irritable or nervous class, than of the congestive or inflammatory. Dyspepsia, attended with flatulency, is complained of, and both the bowels and the biliary secretion are capricious and irregular. In individuals of the sanguine temperament, particularly when subject to cutaneous diseases, the constitutional symptoms are usually manifested in the form of extreme irritability of temper or manner; more especially if the cutaneous affection has, from any cause, been suddenly repelled. In individuals of the melancholic temperament, on the contrary, the constitutional symptoms usually partake of the desponding and hypochondriacal character.

When the obvious presence of a small calculus in the kidney or bladder leaves the nature of the case no longer doubtful, and occasions for the first time the appearance of blood in the urine; the occurrence, whether accompanied by pain or not, is apt to forcibly attract the patient's attention. He

forgets all else. A nephritic attack occurs, his troubles pass away with his calculus, and he recovers, for a longer or a shorter period, his former state of health.

The oxalic acid diathesis is sometimes associated with serous urine, and with organic disease of the kidney, particularly in young subjects; in which case the urine is generally opalescent and of a greenish tint. When a great deal of saccharine matter is consumed as food, the urine is often of considerable specific gravity, and contains sugar as well as oxalic acid. Moreover, when sugar, and particularly oxalic acid, are thus freely taken, oxalic acid may be frequently detected in the urine; and the sediments deposited almost always contain more or less of oxalate of lime.

Sometimes the symptoms are very slight—sometimes they are prominent. Hæmorrhage from the kidneys is perhaps more frequently produced by oxalate of lime, than by any other form of concretion. This may depend in part on the peculiar form of the calculus; but the chief cause probably lies in the nature of the diathesis. But amongst the hundreds who suffer from this, a few only suffer from calculus.

Causes.—Hereditary predisposition is not so common as in diabetes. Syphilis is reproached by Dr. Prout as one cause. The oxalic acid diathesis occurs in all temperaments; but individuals of the sanguine temperament on the one hand, and of the melancholic on the other, seem to be most liable to it. When the diathesis is strongly marked, the skin in all temperaments is apt to assume an unnatural appearance difficult to describe, but the colour of which may be said to vary from dull greenish yellow in the sanguine, to dark olive or livid in the melancholic temperament. Both classes of individuals also are often liable to boils, which in old and enfeebled habits are apt to degenerate into carbuncles.

The periods of life most subject to it seem to be between two and twenty-four, and forty and sixty-five years of age.

The most effective of the *exciting* causes of the oxalic acid diathesis is a residence in a damp and malarious district. But it is not brought on by mere exposure to cold, nor by rheumatism, nor gout. It often, however, accompanies chronic rheumatism, and occasionally follows gout. The abuse of sugar has frequently produced it—so have rhubarb tarts, &c.—the depressing passions will give birth to it—cutaneous affections frequently attend it.

Prognosis.—In slighter cases there is no affection more manageable, if properly treated. In severe cases, particularly if complicated with organic disease, there is no affection more formidable, nor more apt to take on a malignant and intractable character.

Post-mortem Appearances.—In the few instances in which Dr. Prout has been enabled to examine the bodies of persons who have died with this diathesis, the immediate cause of death has been either organic disease of the kidneys, (generally combined with oxalate of lime calculus,) or some malignant disease of other organs. As in diabetes, there has been great tendency to acidity in the system; and the veins of the abdominal system have been unusually congested with dark-coloured blood.

Treatment.—The diet must nearly resemble that prescribed for diabetes. The patient should abstain from all saccharine articles of food, and his diet should consist principally of animal, and of the stronger farinaceous matters.

"As, however, the *reducing* function of the stomach is often considerably impaired in this diathesis, solid and indigestible matters should be sparingly taken, or shunned altogether. Hence the French cookery, by which animal and other matters are reduced to a semifluid or pultaceous mass, often agrees better than the crude and solid chops or steaks of this country. There are many exceptions, however, to this observation; and if the reducing function be not very much impaired, it is proper in all instances to take a certain portion of food of an easily reducible character; the best method of restoring the reducing, as well as all other weakened functions, being to moderately exercise them. When the stomach, as is often the case, cannot reduce oleaginous aliments, butter should be avoided; otherwise there is no objection to its use. As *drinks*, fermented liquors should in general be abstained from as much as possible; in this respect, however, everything will depend on the previous habits of the patient. Sometimes a little good porter agrees well, and may be taken. When porter is deemed objectionable, weak brandy and water is preferable to most wines; particularly those wines containing unfermented sugar. Sound and dry sherry, or even hock and claret, occasionally agree, and may be cautiously taken in some cases. The quality of the water employed is of the utmost importance. Those whose assimilating organs form oxalic acid, and who at the same time drink water containing lime in solution, are exceedingly liable to get an oxalate of lime calculus. The purest water, therefore, that can be obtained, even distilled water, should in all instances be preferred." 68.

The fixed alkalis are seldom beneficial, particularly in large doses; in which form they often do absolute mischief. The volatile alkalis, combined with camphor and sedatives, in cases of great irritability, are sometimes useful. The mineral acids, either alone or combined with tonics, as the sulphate of iron or of quinine, are usually grateful to the stomach, and may be taken with advantage. But when the mineral acids begin to occasion a deposition of the lithate of ammonia or the lithic acid, their exhibition must be suspended. Indeed, in all instances, the mineral acids require to be left off after a time; as, when too long persisted in, they not only cease to do good, but in most instances do harm. Where the patient lives in the country, Dr. Prout commonly recommends the use of the muriatic acid, (or nitro-muriatic acid, as the case may be,) to be persisted in till the lithate of ammonia, or the lithic acid, begins to appear in the urine; or for a *month*; and by adopting such a course of acids three or four times in the year, and by a carefully regulated diet, he has seen the diathesis removed. The hydrocyanic acid, with or without digitalis, is often serviceable in relieving the flatulence and palpitation of the heart. Nearly the same remarks apply to the use of mercury in this diathesis as in diabetes.

OF LACTIC ACID, &c.

The prominent features of these derangements are more boldly marked in tropical climates than in this country, and Dr. Prout merely presents a sketch of them at present. Along with lactic acid, and the nearly related

acetic acid, he considers the subject of the muriatic and other acid principles usually developed at the same time.

Of the development or presence of the Lactic Acid, &c., during the primary assimilating processes.—The lactic and muriatic acids are principally derived from the blood, and from the matters secreted or introduced into the stomach; while the oxalic, butyric, acetic, carbonic, and perhaps occasionally the lactic, acids, are developed from the food during its imperfect assimilation; which imperfect assimilation is often a concomitant circumstance attending the abnormal development of the lactic and muriatic acids. When such abnormal development occurs, though both acids may be in excess, one usually predominates. Dr. Prout thinks the following observations may afford a clue to the reason of the predominance of the one acid or the other. That of the muriatic acid seems in general to denote a phlogistic or inflammatory state of the system; while the predominance of the lactic acid marks rather a state of irritation. This is the general law, though there are many exceptions to it. Dr. P. has commonly found in the dyspepsia of plethoric gouty individuals “the predominating acid the muriatic acid; so also in what are called *bilious attacks*, and gall-stones, as they occur in the same class of individuals, the predominating acid is usually the muriatic. In these and similar instances the stomach may be primarily in fault; but, in general, the stomach is affected by sympathy with some distant part. Thus, in *bilious attacks*, the hepatic system is supposed to be congested, so as to perform its functions imperfectly; or, as happens in some severe cases, the fault lies in one of the great nervous centres. So, in the same class of subjects, gouty or inflammatory action of the kidney, uterus, &c., is apt to be accompanied by a predominance of the muriatic acid. On the other hand, the same derangements and remote sympathies, when they occur in weak and delicate, or in *nervous* subjects, are very often attended by the presence of an excess of lactic acid in the stomach. Moreover, in *all* dyspeptic subjects, hard and crude indigestible matters, when taken into the stomach, irritate that organ, and cause it to throw out a large quantity of the mixed acids, in which the lactic acid almost always predominates; especially in the weak and delicate. An excess of acid, and particularly of lactic acid, in the stomach, is frequently accompanied by more or less of gastrodynia; that is to say, of rheumatic neuralgia, similar to that affecting other nerves of sensation. This happens most frequently in gouty and rheumatic subjects, in whom the exciting cause of the acid development has been some foreign indigestible substance.

With respect to the other acids formed in the stomach, these seem also to occur most generally in dyspeptic individuals in whom the muriatic and lactic acids abound; and in whom, in consequence, the digestive processes are imperfectly performed. These acids appear to be chiefly derived from the food, and therefore are probably various in their nature. Among others, the carbonic acid is frequently developed not only from the food, but apparently from the stomach itself; and, in its gaseous form, occasionally proves a source of flatulent eructation. Another, and by far the most troublesome, source of flatulence, is azote. This, in nervous subjects, is occasionally developed from the stomach in enormous quantities in conjunction with the lactic, and particularly with the oxalic acid, as formerly mentioned.

At other times azote is probably derived from the food; but from whatever source this gaseous principle be derived, it usually gives much annoyance; for while the carbonic acid gas, on account of its stimulating qualities, generally escapes from the stomach, the passive character of the azote, and the peculiar spasmodic constriction which usually accompanies its development, cause it to be retained; and thus, by distending the stomach, to add greatly to the miseries of the patient."

The muriatic acid, if formed from the muriate of soda in the blood, may be neutralized by the soda set free by the liver. But if there be lactic acid in excess, there is no alkali to neutralise it. The consequence is, that the free acid is either taken up with the chyle into the lacteals; or descends into the intestines; where, in conjunction with other acids there developed or separated, it produces various *secondary* symptoms. These symptoms are either local or remote; and moreover differ remarkably in different individuals, and at different ages. In adults, while the acid ingesta remain in the duodenum, great discomfort and uneasiness of various kinds are experienced. Again, peculiar symptoms, among which are a sense of heat and painful colic, often attend the passage of acid matters down the small intestines. If the acid matters pass unneutralised from the cœcum, they usually give occasion to more or less of pain throughout the region of the colon, and sometimes excite diarrhœa. In young children, these and many other distressing symptoms, produced by acidity in the primæ viæ, are still more strongly marked. Thus acid matters, in passing from the duodenum through the small intestines, often produce violent tormina, occasionally terminating in intus-susception; while the presence and retention of acids in the cœcum and colon not unfrequently give occasion to convulsions.

These symptoms may be occasioned by the absorption of acids into the system, as well as by their presence in the primæ viæ. The following account of the effects of *Acidity in the Cæcum*, will, we apprehend, be new to our readers:

"Excessive acidity of the cœcum is generally accompanied by a deficient secretion of bile; and sometimes by a complete temporary suppression of the bilious discharge, apparently from spasmodic constriction of the common gall-duct; or, it may be, of the biliary ducts themselves. In this state of things, all individuals feel more or less of uneasiness; but the point we wish to mention is, that certain individuals under these circumstances experience what is called nervous headache. This species of headache is frequently accompanied by nausea; is confined to the forehead; and when severe, produces complete intolerance of light and sounds, and a state of mind bordering on delirium. After a greater or less period the pain ceases; sometimes quite suddenly; and the remarkable circumstances to be mentioned are, that this sudden termination is preceded by a peculiar sensation (sometimes accompanied by an audible clicking noise) in the region of the gall-ducts; that immediately afterwards, a gurgling sensation is felt in the upper bowels, as if a fluid was passing through them; and that in a few seconds, when this fluid, which we suppose to be bile, has reached the cœcum, the headache at once vanishes like a dream. One of the greatest martyrs to this species of headache I have ever seen, invariably experiences the train of symptoms above described; and I have witnessed it in a greater or less degree in many instances; indeed I have experienced it in my own person." 75.

Of the Development of the Lactic Acid, &c. during the Secondary Assimilating Processes.—The effects of the acids developed during the secondary assimilating processes are with difficulty distinguished from those already described.

In dyspeptic persons who suffer from acidity in the primæ viæ, the secondary assimilating processes are deranged. The symptoms have more or less of a periodic character, and show themselves in occasional attacks of bilious congestion, gout, lithic acid gravel, catarrhal affections, ague, rheumatism, &c., according as exposure to cold, malarious influence, &c., co-operates with the original predispositions, and determines their nature.

Those who suffer least from derangements of the primary digestive processes, often experience the greatest inconvenience from the derangements of the secondary class, or from their consequences. They boast that nothing disagrees with them, and eat of every thing that comes in their way. In the prime of life, and in sound constitutions, this state of things goes on for periods varying according to circumstances, and particularly according as individuals are indolent or active. In almost all instances, however, sooner or later, the urine becomes loaded, the liver congested, and more or less of fever and derangement of the stomach and bowels,—in short, what is usually called a *bilious* attack, takes place. A calomel pill and black draught seem to set matters right, and the same habits and same round of changes recur.

“There are some individuals in whom, though the primary assimilating processes are imperfectly performed, and though they eat and drink immoderately, and of everything that comes in their way, suffer comparatively little inconvenience from their excesses; nay, even seem to be all the better for them, if we believe their own account of the matter. In such individuals the bowels are usually lax, and enormous quantities of feces are passed, consisting of matters taken as food, and which have never been assimilated at all; while the portion that has been imperfectly assimilated and taken into the system readily passes off by the kidneys, skin, &c., without materially affecting the constitution. Subjects of this description, for the most part, are of a lax scrofulous habit, and require to be well supported, in order that enough of matters may be assimilated by their imperfect organs to carry on the vital processes. If such individuals be well fed, they often attain old age; but they are liable to hypertrophies and morbid growths of various kinds; and generally die of dropsy connected with extensive organic disease. The children of such individuals, if they have any, which is frequently not the case, are usually sickly, and very often die in their infancy; and a third generation of such a race, unless counteracted by favourable intermarriages, rarely exists. Habits of this description are met with in various grades, and states of combination; and individuals in whom such habit is associated with gout, gravel, or in short, with any other inherited predisposition to disease, are commonly remarkable sufferers.” 78.

Dr. Prout reverts to the circumstances that, in full livers, of a healthy constitution, usually precede a “*bilious attack*.” When acid and unassimilated matters accumulate, as they do in the dyspeptic, they are thrown off periodically by the bowels, or by other organs. In the strong, the symptoms take the form of simple feverish excitement, with more than usual derangement of the stomach and bowels, and generally sickness and diarrhœa; in the delicate, the weak part, whatever it may be, is involved more particularly under the influence of cold. Thus every one must have observed that when the system is so charged, he is liable, on the slightest exposure, to get cold;

particularly if the lungs are in the least degree predisposed. Others, as above observed, in such a state of the system from a similar exposure, get an attack of rheumatism; others gout or erysipelas; others a nephritic attack. Bilious persons, too, in such a state, on comparatively slight exposure to malarious influence, get an attack of rheumatism or ague. Dr. Prout adds:—

“When a cold is caught, particularly in old and dyspeptic individuals, one of the first symptoms often experienced is an immense discharge of glairy aqueous fluid from the salivary glands, and even from the stomach, (analogous to the *water-brash*), and which is not acid. This discharge of fluid is often accompanied by indigestion and flatulence, and a sort of spasmodic constriction of the cardia, so that the gaseous matters are expelled with difficulty. The watery discharge has often a *cold* feel, and is frequently most copious in the night. The stomach also feels *cold*. These phenomena seem to occur most frequently in gouty and rheumatic subjects, and in some are constantly present, in a greater or less degree; but in all are increased by exposure to a damp and raw atmosphere. Under these circumstances, the stomach is apt to be particularly embarrassed by any indigestible and cold articles of food, which aggravate the affection. This state of the salivary glands, &c., seems to resemble closely that state of the skin which gives occasion to what is termed a *cold sweat*; or that condition of the kidneys produced by exposure to cold, which in certain habits is accompanied by diuresis, &c. Such a state is always attended by a peculiar atonic condition of the nerves of the parts affected; which nervous atony paralyzes or renders the organs insensible, as it were, to every stimulus except that of water, which in consequence passes off in excess. In aged individuals who are constantly subject to this flow of watery fluid in a profuse degree, the discharge seems to operate vicariously to the kidneys, and perhaps to other organs; and I have several times seen coma supervene on its sudden cessation.” 79.

Dr. Prout would infer, from the facts already stated, that the severe derangements of the secondary assimilating processes going on all over the system, are nearly allied to certain forms of *fever*; while the local and specific derangements are identical with certain specific *inflammations*.

He continues:—

“We may perhaps be allowed to assume, without opposition, that *some* diseases to which we apply the terms *fever* and *inflammation*, are, *practically* speaking, at least, what we have above inferred them to be, viz. only severer derangements of the secondary assimilating processes, modified by the peculiar nature of the organs or textures in which such derangements exist—inferences that will enable us to explain the principles on which derangements of the primary assimilating processes predispose to the peculiar derangements of the secondary processes now under consideration; and which we consider to be nearly connected, if not identical, with those forms of fever and inflammation usually denominated *intermittent fevers*, *rheumatism*, and *neuralgia*.” 80.

The exciting cause of those diseases is generally admitted to be malaria. Yet every one who has observed these diseases attentively, will probably admit, that the derangements of the assimilating organs constitute one of the first perceptible links in the series of symptoms; and, moreover, that these derangements of the assimilating organs are usually accompanied by the presence of great acidity in all parts of the system. Thus, in ague and rheumatism, during the sweating stages of the paroxysms, immense quantities of acid (chiefly of lactic acid) are thrown off by the skin; and sometimes by the kidneys. In these cases the saliva is commonly acid; and, in

the severe and malignant diseases of this type, occurring in tropical climates, not only the saliva, but the whole assimilating organs, and even the blood itself circulating in these organs, have been observed to be in an acid condition.

"Now, the presence of so much lactic acid cannot be accounted for, except on the supposition that a certain portion of what ought to constitute, or actually has constituted, the albuminous, or, rather, gelatinous parts of the system, are decomposed or destroyed: and as gelatinous and albuminous matters or textures cannot be converted into lactic acid alone; that consequently, other unnatural and probably poisonous principles are developed in conjunction with the lactic acid; to which in part, as well as to the lactic acid, many of the secondary consequences of mal-assimilation are to be referred. In other words, the alimentary matters which ought to be converted into albumen, by the primary assimilating organs; and the albuminous matters of the blood, which, in the secondary assimilating processes, ought to be converted into the living gelatinous and albuminous tissues, are, by the deficient or disordered operations of the vital processes, converted, in a greater or less degree, into lactic acid, and other unnatural combinations." 82.

Dr. Prout next asks—what constitutes the difference between ague, rheumatism, and neuralgia, when the cause and general conditions of the system in these affections are assumed to be the same? And the only answer he can give is—difference in the degree in which the same organs are affected; or differences in the seat of disease or organs affected; or, what is most likely, a combination of both these kinds of differences. Difference in *degree* he thinks hardly competent to the effect. He is "driven to the conclusion, that these different forms of disease arise from derangements in the secondary assimilating processes proper to different tissues or structures. Thus we may suppose (and the supposition seems to be rendered probable by the phenomena) that, in intermittent fevers, the primary assimilating organs, the stomach, the liver, and the spleen, are principally in fault; that the secondary assimilating processes, by which the structure or tissue of these organs is produced and maintained, are impaired; and that to the consequent imperfect development of these organs we may not only refer the formation of the lactic acid, and other unnatural matters, generated during the digestive processes; but also those organic lesions and morbid hypertrophies, which are so apt to take place in the spleen, &c. during severe and long-protracted fevers of this type. In rheumatism, the same derangements, to a less extent, appear to exist in the primary assimilating organs; but, in this case, the secondary assimilating processes, by which the gelatinous portion of the muscular system and its appendages are produced and maintained, may be supposed to be more especially implicated; and the loss of power, and the great degree of pain usually present in rheumatism, may be referred to the disorder of the numerous nerves of motion and of sense, which, as well as the fibrinous portion of the muscles, are likewise necessarily affected by the derangements. Moreover, on these suppositions, we may explain the formation of the large quantities of lactic acid usually present in rheumatic affections, as well as the swelling, &c.; for as all the organs are more or less involved, and their functions paralysed, not only imperfect assimilation takes place in the part affected; but the apparatus destined to remove matters which are unfitted, or no longer useful, from the scene of operation, likewise cease to act; and hence such

unfitted and useless matters accumulate, and cause swelling in the part affected. In simple neuralgic affections, nearly the same explanation may be given. Derangements of the primary assimilating processes, analogous to, or identical with, those existing in ague and rheumatism, are always present in a greater or less degree in these affections; while the derangements going on in those secondary assimilating processes, by which the nervous substance and its immediate appendages are produced and maintained, may be supposed to be the immediate cause of the pain and other distressing symptoms of the disease."

Only rheumatic neuralgia is here alluded to.

Treatment.—There are two classes of remedies—the empirical, consisting of quinine and tonics in general—and those counter-mechanical or chemical expedients, which are calculated to neutralise the effects of mal-assimilation.

In the treatment of the development of acidity during the primary assimilating processes, the first point to be determined, as far as we are able, is the nature of the *cause*. Then the empirical treatment may be applied. Thus, if the cause lies principally in the stomach itself, and the symptoms denote an inflammatory tendency, the due administration of local blood-letting, &c., will be found beneficial; if mere irritation be indicated, sedatives, as the hydrocyanic acid, various tonics, &c. will be found useful. If the cause be chiefly remote, as in the hepatic system, the employment of means calculated to remove inflammatory or passive congestion, as mercury and other deobstruents, will be indicated. If the cause be organic disease; and if such organic disease lie deep in the system, as in one of the great nervous centres, very little beyond palliatives can be advantageously employed. Frequently the cause is not isolated, and merely one of the three. They are complicated, and the case proportionably hard to manage.

The two great objects to be kept in view in the administration of the second class of remedies is either the mechanical object of getting rid of the unnatural material whose effects we wish to obviate; or the chemical object of neutralizing the acid, and other unnatural products of the primary assimilating processes. Now, as both these objects have reference to certain periods, and depend upon the *time when* the assimilating organs are called upon to perform their duty; it is obvious, that to obtain the utmost benefit of this class of remedies, their administration must in a great degree be regulated by such periods. Thus the acid residua of a meal should be neutralized when the digestive processes are completed; that is to say, from three to six hours after the meal has been taken; and for this purpose, even in the worst cases, from ten to twenty or thirty grains of the carbonate of potash will be quite sufficient. Four or five grains of nitre are a good addition to the carbonate of potash. This remedy must be steadily persisted in, till the affection has been entirely subdued by the joint effect of appropriate diet and medicines. For alkaline remedies *do not prevent acidity, but merely neutralize that formed.*

When acidity prevails in the lower portion of the intestinal canal, and particularly in the cæcum, the treatment must be modified to meet the circumstances. The soluble antacids in this case have comparatively little effect, from their being neutralized and absorbed before they reach the seat

of the affection; hence the insoluble antacids, and particularly magnesia, will in general be found more useful in such cases. The shortest mode, however, of getting rid of the immediate inconvenience of acidity in the lower bowels, is usually to inject a pint or two of warm water, (or of soap and water,) and thus of removing the offending cause. Mild purgatives too are serviceable.

GENERAL OBSERVATIONS ON THE PATHOLOGY OF ALBUMINOUS ASSIMILATION AND SECRETION.

The derangements of albuminous assimilation are best identified by the changes they induce in the urinary secretion. These changes form the basis of Dr. Prout's classification, which is as follows:—

- a. Derangements of the assimilating processes, accompanied by excess or deficiency of urea in the urine.
- b. Derangements of the assimilating processes, accompanied by the presence of albuminous matters in the urine.
- c. Derangements of the assimilating processes, accompanied by the presence of lithic acid and its compounds in the urine; and,
- d. Derangements of the assimilating processes, accompanied by the presence of cystic oxide in the urine.

Of an Excess and Deficiency of Urea in the Urine.

Dr. Prout thinks these affections not sufficiently attended to.

Of Affections connected with Excess of Urea in the Urine.—The proportion of urea in healthy urine is such, that on the addition of nitric acid, no crystallisation takes place till the urine is concentrated by evaporation. In a variety of cases, however, the quantity of this principle is so increased, that crystallisation takes place on the addition of nitric acid, without any previous concentration of the urine; and in many such cases, on analysis, we find that this excess of the urea is not only absolute but relative; that is to say, that the quantity of urea in the urine is not only absolutely greater than natural, but relatively far greater to the other ingredients, than it is, or ought to be, in the healthy secretion. Now this absolute and relative excess of urea in the urine gives occasion to two forms or rather modifications of disease, which, as in diabetes, are chiefly distinguished by differences in the quantity of urine passed, viz. *Excess of urea without diuresis, and Excess of urea with diuresis*. These two forms of disease, precisely as in diabetes, without or with diuresis, sometimes gradually pass into each other in the same individual; and in fact they seem to differ from each other little more than in degree. In the first form of the disease, the quantity of urine passed seldom much exceeds the healthy standard, and in this case the quantity of urea is both absolutely and relatively greater than in health. In the second form of the disease, the quantity of urine is sometimes excessive; and in this instance the quantity of urea, in a given specimen of urine, may be less than in health; though the quantity of urea relatively to the other ingredients may be greater than natural; and the absolute quantity of urea passed in a given time, may thus, as in the other modification of the disease, exceed the natural standard.

In the first form of the disease, the average specific gravity of the urine seems to be a little above 1·020; and occasionally to vary from 1·015 to 1·030, or even higher. Most generally the secretion is transparent and pale coloured; but occasionally assumes somewhat the appearance of porter more or less diluted with water; and this variety in colour not unfrequently takes place in the urine of the same person. When first voided, the urine reddens litmus paper, and consequently has the usual acid reaction of healthy urine. Its only remarkable property is that of containing so much urea as to speedily form a crystallized compound on the addition of nitric acid. It is prone to decomposition, and soon becomes alkaline.

The patient has usually a frequent desire to make water, and the quantity voided in the twenty-four hours appears to be somewhat above the natural standard, and is influenced by slight causes. There is sometimes a sense of weight or dull pain in the back, accompanied by a disinclination to bodily exertion. The patient also complains of more or less uneasiness in the assimilating organs. The functions of the skin too appear to be little deranged; hence perspiration, from the fatigue it is apt to produce, often takes place readily under exercise.

In the second modification of the disease, in which the quantity of urine passed is excessive; besides most of the symptoms above enumerated in an aggravated form, there exists, in addition, more or less of thirst and morbid craving after food. The patient likewise complains of general coldness and great bodily weakness. In some instances also there is considerable emaciation; though not to the same remarkable extent as in diabetes.

The causes are allied to those which predispose to diabetes. Hereditary disposition is probably a common one. Abuse of the sexual powers in early life is another. Indiscretions in diet, anxiety, &c. are others.

Most of the subjects Dr. P. has seen have been middle-aged men, of thin and spare habit, with a sort of hollow-eyed anxiety of expression in their countenance; unusually nervous and susceptible, but by no means always hypochondriacs; and free also from gout, and, as far as could be ascertained, from structural disease of the urinary or any other organs.

Dr. Prout thinks the complaint rare—twenty, perhaps, of diabetes may be seen for one of it. But patients may pass it by until it has terminated in something worse.

The *proximate cause* of the disease may be found, in Dr. Prout's opinion, in derangements of the secondary assimilating processes, rather than of the primary; that is to say, that the chief source of the urea in the system is that peculiar modification of the albuminous principle distinguished as gelatine; and which, as is well known, is not found in the blood, nor in any previous stage of the assimilating processes; but is developed only during the secondary assimilating processes.

Treatment.—In the two first forms of the disease, the diet should be light and nutritious, but not stimulating; and in general should consist principally of animal and farinaceous matters. If the patient has been accustomed to the use of fermented liquors, a small quantity of the more generous wines, or sound porter, may be allowed; but all diluent and diuretic fluids should be abstained from as much as possible; and thirst should not be indulged.

Moderate exercise on foot and horseback, and abstinence from anxiety are to be enjoined.

No rough treatment of any sort should be attempted. Purgatives and alteratives may be required, but should be employed with caution. In both forms of the disease, and particularly in the second, sedatives are usually required, and of these opium is the chief. With the sedatives may be conjoined such tonics as seem to be suited to the individual habit; and as the complaint recedes, and the health becomes re-established, the sedatives may gradually be withdrawn.

Of Affections generally connected with a Deficiency of Urea in the Urine.

That the extrication of urea by the kidneys is indispensable is not only probable in itself, but accordant with experience, for Dr. P. has never found a specimen of urine, which, when recently passed, did not, on examination, prove to contain more or less of urea, or of its equivalent carbonate of ammonia. Yet there are several forms of disease, in which the proportion of urea is not only absolutely but relatively less than it is in healthy urine. A prominent symptom of these various affections is usually diuresis. The complaint varies somewhat in adults and children.

In adults, it may be considered under the heads of *Diuresis Intermittens* and *Diuresis Continua*. "Perhaps," says our author, "the nearest approach to an entire absence of urea in the urinary secretion, occurs in hysteria. Hysterical diuresis, however, is distinguished by being *occasional*: while, in the intervals, urine is often passed containing a greater proportion of urea than natural. Hysterical urine has often a specific gravity scarcely exceeding that of spring water; and as passed, is often limpid and colourless, and nearly free from sensible properties of every kind. When much concentrated, however, by evaporation, hysterical urine always, according to my observations, displays sensible colour and odour; and if examined in this condition, not only yields traces of saline matters, but of urea. Hysterical urine has sometimes a disagreeable odour when passed; and in almost all instances soon acquires a purid smell, like that of cabbage water; becomes more or less opaque; and deposits crystals of the triple phosphate of magnesia and ammonia; especially in warm weather. Hysterical urine is not exclusively passed by females; but is occasionally voided by individuals of the other sex. In general the affection requires no specific treatment, but yields to appropriate remedies in common with the other symptoms of hysteria. Many nervous individuals, also, who cannot be said to be hysterical; or to be subject to any urinary disease, often, as is well known, pass large quantities of limpid urine on exposure to cold, and to various other exciting influences. Such urine generally differs from hysterical urine in being only *very dilute* healthy urine; while in hysterical urine the relative proportions of the ingredients are always deranged." The two, however, run into one another.

The diseases described by authors under the name of *Diabetes Insipidus*, are probably various in their nature. Generally they seem referable to the class under consideration. The urine voided in a given time is *constantly* much above the healthy standard; the patient usually drinking in proportion. It is almost as colourless as water; at other times it is of a very light straw colour; and its specific gravity in these instances is found to vary from the

specific gravity of spring water, viz. 1·001 or 1·002, to 1·008 or 1·010. The more dilute specimens of urine are commonly quite neutral; but the heavier specimens have sometimes a faint acid reaction. The proportion of urea, as compared with that of the other ingredients, is usually less than natural; hence such urine, on being kept, often acquires a putrid or sour, rather than an ammoniacal smell. But so much urine is made, and this is so influenced by the fluids taken, that it varies greatly.

The constitutional symptoms vary too. But there is always great thirst; a dry state of the skin; and usually a constipated state of the bowels. In most cases, there is an uneasy sensation referable to the stomach, accompanied by a morbid craving for food; at other times this sensation merges into nausea, and there is a perfect indifference to solid matters; which are almost immediately ejected by vomiting. There are also more or less of emaciation; depression of spirits; and great muscular debility, with all their consequences.

Causes.—On this head Dr. Prout has little to say. However this form of diuresis may depend upon the nervous temperament, it certainly, in its turn, aggravates it. It seems to occur equally in both sexes, and is chiefly limited to the middle period of life. Sometimes, as already stated, it appears to be the natural consequence of the form of diuresis connected with an excess of urea. At other times it cannot be referred to any distinct cause. Dr. Prout believes that it is often connected with, or leads to, incipient disease of the kidneys; and if this opinion be correct, it may occasionally pass into the forms of disease marked by albuminous urine.

Diuresis, with deficiency of urea, in young children, is usually accompanied by symptoms very similar to those before-mentioned as occurring in diuresis with an excess of urea; but the symptoms are commonly much severer. The quality of urine is worse, being, often, more or less serous, and when the disease proves fatal, as it frequently does, the kidneys, as well as other organs, are found to be in a state of disease.

The diuresis of old people, and particularly of old men, is often accompanied by a deficiency of urea; but it is generally associated with some apparent organic disease, either of the kidneys or neck of the bladder, or both; to which, as causes, the diuresis appeared to have been chiefly referable. The urine in these cases is often alkaliescent or slightly serous.

The complaint is often extremely obstinate, and when it appears to give way, is disposed to return from the slightest causes. It often, too, proves fatal from dropsical effusion or coma.

Treatment.—One of the first great principles to be attended to, is, as much as possible, to restrain the patient from drinking; for if he be allowed to drink *ad libitum*, it is in vain to hope for benefit from any plan of treatment. Another point to be kept in view, is to promote cutaneous action. For this purpose the vapour bath and friction, assisted by the internal use of Dover's powder, antimony, &c.; or, if the patient's circumstances admit, removal to a warm climate; will be found highly serviceable. Tonics of every kind usually disappoint our hopes; and the more active tonics especially, often increase the thirst. To these may be added sound porter, and

diet consisting chiefly of animal and farinaceous matters. Active purgatives are mischievous.

The treatment of the disease in infants and young children is similar in principle to the treatment of diuresis accompanied by an excess of urea; but to ensure a chance of success, the remedies must be much more carefully and sedulously applied; and in spite of all that can be done, the complaint usually goes on to a fatal termination.

Of Albuminous Urine.

Dr. Prout remarks on the controversy which has existed and exists in reference to the organic lesions occasioning albuminous urine. But he takes no part in it. He adheres to his old opinions. He says—

“ I considered the albuminous matters occurring in the urine as of two distinct kinds, viz. chylous and serous; in the first case, the albuminous matters of the urine were supposed to resemble the albuminous matters in the chyle; in the second case, the albuminous matters in the urine were supposed to be identical with the albuminous matters of the blood. I also remarked that distinctly defined instances of both these varieties of albuminous urine are rather uncommon; and that by far the most frequent form which the disease assumes, seems to be of a mixed character; that is to say, the albuminous matters in the urine partake more or less of both the chylous and serous characters.” 112.

He therefore describes albuminous urine under the two heads of *chylo-serous urine* and *serous urine*, admitting that they run into each other, and that the latter is the more frequent.

Of Chylo-serous Urine.—We pass over, as our readers must be acquainted with it, the description of this sort of urine, and merely notice the conclusions drawn by Dr. Prout from thirteen cases of which he has seen more or less.

First. The disease occurs in both sexes before and after puberty. Of the thirteen cases, five were males and eight females. In three cases, two males and one female, the disease occurred before puberty; of these three cases, one was a male infant of about eighteen months old.

Secondly. Of the thirteen cases, seven occurred either in natives of hot climates, (East and West Indies,) or in individuals who had resided for many years in hot climates.

Thirdly. The general health suffers much less than might be expected. Two of the females, for instance, while labouring under the affection in a marked degree, became pregnant and brought forth healthy children. Hence the disease does not interfere with the generative functions; nor with the secretion or qualities of the milk.

Fourthly. Of the thirteen cases, three are known to be dead. Of the remainder, five, Dr. P. believes, are alive and well. Of the others he can give no account. In two of the fatal cases, the patients were cut off by acute attacks of inflammation of the abdominal viscera. The third patient, whose case will be subsequently given as an illustration, died apparently in a state of exhaustion and great emaciation, after labouring under the affection for nearly twenty years.

Fifthly. The disease is not necessarily connected with organic lesion of the kidney; at least organic lesion appreciable by the senses.

Sixthly. The causes of this affection, whether predisposing, exciting, or proximate, are imperfectly understood.

Of Serous Urine.—We shall merely, in the present article, introduce Dr. Prout's views on this important affection to our readers. In our next we shall complete our notice of the volume.

Dr. Prout observes that, strictly speaking, perhaps there are many varieties of disease belonging to this head, differing not only in degree, but even in kind from each other; but, in the present state of our acquaintance with these subjects, such varieties can with difficulty be distinguished. He considers, however, only two principal kinds or species, one of an *acute*, the other of a *chronic* character. The first of these species includes at least two varieties, differing from each other principally in degree; the second eight; and the whole ten varieties so gradually pass into each other, that it is not easy to define their exact limits. If there be, however, a distinguishing feature in the character of the urine between the acute and chronic species, it consists in the fact,—that in the two acute varieties, the urine on cooling frequently deposits the lithate of ammonia; while in four at least of the chronic varieties, this phenomenon never occurs under any circumstances.

Dr. Prout first defines the sense in which he understands and uses certain terms.

"The different meanings attached to the term *inflammation*, or what is the same thing, to words terminating in *itis*, by authors, are a frequent source of misconception, and consequently of mistakes, in medical reasonings. Many of the continental authors, for instance, and particularly the French authors, appear to consider inflammation as almost the only cause of disorganization; at least, it is difficult to arrive at any other conclusion, provided they employ the suffix *itis*, in its usual acceptation. Thus in the recent excellent work of M. Rayer, the diseases to be here and elsewhere considered, are arranged under the heads of *Nephritis*, *Pyelitis*, *Peri-nephritis*, &c. according as the secreting portion of the kidney, or the membranes lining its internal cavities, or covering its external surface, &c. are found, after death, to be affected with signs of recent inflammation. This view of the subject has always appeared to me to be imperfect. That inflammation is the *immediate* cause of death in most of these diseases is not denied; but admitting this, I ask, does the term inflammation, even when qualified by the epithet chronic or otherwise, rightly designate that comparatively quiescent state of the kidneys which immediately preceded the fatal inflammatory attack? The general answer to this question must, I think, be in the negative. That there is such a condition as chronic inflammation; and that such a state of chronic inflammation does, in some instances, exist in the kidneys previously to the more acute and fatal attack, is not doubted; but my decided opinion is, that in the greater number of instances, the previous state of the kidneys cannot by any justifiable latitudinarianism be designated by the term *chronic inflammation*." 122.

All organic affections, he continues, may be supposed to arise from *degeneration* and *inflammation*. By degeneration, he means that slow and gradual change occurring in all living structures, which appears to be connected with, or to result from, the gradual decay of the vital processes in general, and particularly of the processes of assimilation. Degeneration, therefore, is the natural and universal consequence of age; but it may

arise in early life from a variety of causes, among which the most frequent are : first, an *inherited* and *innate weakness* of the vital powers, either as they exist in the system generally, or as they exist in particular organs ; as for instance in the kidneys ; secondly, an *acquired* weakness of the vital powers in general, or as regards the vital powers of particular organs, produced by a variety of slowly acting causes ; such as continued errors in eating and drinking ; long exposure to the influence of unhealthy situations ; or of occupations unfavourable to the general health, &c. ; and, thirdly, an *acquired* weakness of the vital powers, either general or local, produced by the operation of acute causes ; as acute inflammation, severe accidents, &c.

The term *inflammation* he employs in its admitted sense, and considers three grades or kinds of it ; viz., *acute* inflammation, or inflammation in its most active form ; such as it more especially exists in healthy subjects and in healthy organs : *chronic* inflammation, or that obscure state of activity, which, for want of a better term, we designate inflammation ; and which is almost exclusively limited to degenerated structures : and *congestive* or *adynamic* inflammation, such as occasionally follows acute inflammation in healthy subjects ; but much more generally takes place in unhealthy subjects ; or succeeds to the chronic inflammation of degenerated structures.

He deduces the following inferences from these views :—

First. A degenerated condition of an organ, from whatever cause produced, may exist for a greater or less period in a state of comparative quiescence ; during which state of quiescence, the system in general may accommodate itself more or less perfectly to the degenerated state of such organ.

Secondly. Local degenerations are liable to become aggravated from a variety of causes, and particularly from inflammation ; and when such causes have ceased to operate, as for instance when the inflammation has subsided ; the general system, as before, gradually accommodates itself, during the succeeding period of quiescence, to the new order of things induced by the inflammatory attack.

Thirdly. Such alternations of comparative quiescence and of activity repeatedly take place ; the degeneration on the whole being increased during each successive paroxysm ; till finally the patient is cut off during an inflammatory attack, which overwhelms his exhausted powers.

Fourthly. The patient in such cases cannot be said to die of inflammation alone ; but of the conjoint effects of degeneration and of inflammation. Moreover, the inflammation would probably never have taken place, had degeneration not existed as a predisposing cause : or having taken place in a perfectly healthy structure, the inflammation would not have proved fatal.

Fifthly. The appearances presented after death under these circumstances are often very unsatisfactory, and quite useless in a pathological point of view ; inasmuch as by presenting the conjoint effects of degeneration and of inflammation, they do not enable us to distinguish what is due to degeneration, and what to inflammation ; a distinction in all instances of the utmost practical importance.

Reverting to the kidney, Dr. Prout considers the *serous* character of the urine with reference to the kidney in a state of *health* (sp. a.) ; and with reference to the kidney in a state of *degeneration* (sp. b.) ; and as further *varied* by the accidental circumstances of *quiescence*, and of *inflammation*. So that the arrangement stands thus :—

Species *a.* Serous Urine ; the Kidney in a State of Health. { var. 1 Quiescent.
var. 2 Inflamed.

Species *b.* Serous Urine ; the Kidney in a State of Degeneration. { var. 1 Quiescent.
var. 2 Inflamed.

In treating of degenerated kidneys, Dr. Prout employs the terms *anæmotrophy* and *hæmotrophy* to imply a deficiency and an excess of sanguineous nourishment. "*Atrophy* and *hypertrophy*," says he, "as commonly understood, include the idea of diminished and increased magnitude ; and do not, therefore, exactly express the meaning intended to be conveyed. On the other hand, *anæmia* and *hyperæmia* have reference only to the quantity of blood present, without regard to its nutritive properties. For these reasons, as well as for the sake of distinction, I have adopted the terms in the text to designate those peculiar conditions of degenerated organs, chiefly characterized by the absence or presence of (red) blood ; and which conditions apparently depend on the individual contraction or expansion, or on the numerical diminution or increase (or both) of the blood-vessels supplying such degenerated parts. That some such distinction is requisite for describing the condition of degenerated structures, is evident from the fact, that an organ may be *anæmotrophied* or *hæmotrophied*, without being diminished or increased in bulk ; or without the presence of general *anæmia* or *hyperæmia* ; and *vice versa*."

And in reference to this *anæmotrophic* and *hæmotrophic* condition of the kidney, he thus classifies the affections of it in a state *degeneration* :

Species <i>b.</i> Kidney Degenerated.	SECT. I. In a State of ANÆMOTROPHY.	Subspecies <i>a.</i> The kidney in a state of <i>organic change</i> ; but without any <i>visible</i> derangement of its ultimate structure.	{ Var. 1. Quiescent. Var. 2. Inflamed.
		Subspecies <i>β.</i> The kidney in a state of <i>disorganization</i> , i. e. having its ultimate structure more or less visibly destroyed.	{ Var. 3. Quiescent. Var. 4. Inflamed.
	SECT. II. In a State of HÆMOTROPHY.	Subspecies <i>γ.</i> The kidney in a state of <i>organic change</i> ; but without any <i>visible</i> derangement of its ultimate structure.	{ Var. 5. Quiescent. Var. 6. Inflamed.
		Subspecies <i>δ.</i> The kidney in a state of <i>disorganization</i> , i. e. having its ultimate structure more or less visibly destroyed.	{ Var. 7. Quiescent. Var. 8. Inflamed.

Here we pause for the present. As we before observed, we shall return to the work in our next Number. And a very remarkable work it is, destined, if we mistake not, to effect material changes in the science of medicine, and to exercise a not inconsiderable influence upon its practice. Whatever we may think of the extent to which Dr. Prout has carried his views, none can refuse to him the merit of a profound thinker and a most sagacious observer. His views are perhaps the boldest and most original of our time, and their philosophic character is a record at once of the knowledge

of the day and the genius of their author. It would be wrong to conceal our humble opinion that something of speculation is mixed up in them, and that they occasionally border on the fanciful. The chemist, likewise, is somewhat too apparent, and the humoralism, though of the most exalted and scientific character, may be deemed a little too prominent. But so masculine a mind as Dr. Prout's, possessed of a mode of analysis so powerful, may be well excused for applying it too widely, and for attempting to reduce too numerous phenomena within its sphere. This is a slight error which will bring its own correction,

Our readers, we are sure, will not be displeased at our lengthened account of a volume which teems with such valuable facts and equally valuable reasoning. In our next, that account will be completed.

Periscope;

OR,

CIRCUMSPECTIVE REVIEW.

"Ore trahit quodcunque potest, atque addit acervo."

DESCRIPTIVE CATALOGUE OF THE PREPARATIONS IN THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND. By *John Houston*, M.D. M.R.I.A. Curator of the Museum. Vol. II. Pathology, pp. 604. Dublin, Hodges and Smith: London, Renshaw, 1840.

MR. Houston is so favourably known to the profession, on this side of the water as well as on his own, that we need not say any thing complimentary about him. Yet the work before us deserves a compliment, for it is drawn up with care, judgment, and ability. It possesses, too, a wider sphere of utility than might be imagined from its name, for not only is it a Descriptive Catalogue, but its histories of cases, and accounts of pathological facts are, many of them, highly instructive.

The preparations in the museum and the descriptions of them here are arranged, not inconveniently, in six classes.

The first class, distinguished by the letter A, contains all the organs concerned in the assimilation of food.

The second, by B, contains the organs of circulation.

The third, by C, the organs of respiration.

The fourth, by D, the organs of sense.

The fifth, by E, the organs of locomotion and prehension.

The sixth, by F, the organs of generation and secretion of urine.

We cannot analyse, it would be impertinent to review, and we will not pretend to cull all the valuable facts out of this volume. It is one for the closet, adapted for reference, valuable for study. The student, young or old, who will take it into the museum it belongs to, and meditate upon the preparations on *those* shelves, their records in *these* pages, will have a large addition to his scientific knowledge, and thank Mr. Houston for his aid. Nay, the fire-side student who will take the book upon his knee, and carefully con it without the accompaniments of shelf or bottle, will rise from its perusal stored with much information that he could not be previously possessed of.

We will quote some of the facts which crowd the pages of the Catalogue, and which may seem curious, entertaining or instructive. But for every fact we *do* quote, our readers must understand that a hundred just as good remain behind. It would turn this Journal to a catalogue to do justice to all.

Face of a Man eaten by a Pig.

A. a. 5.—Picture of a man whose face was eaten away, by a pig, while lying in a state of drunkenness. The entire nose, both cheeks, and parts of both ears, in fact, all the most eatable parts of his face were chewed off by the animal; nevertheless, the wounds all healed, and he recovered: but of course with all the disabilities of enunciation, chewing, and swallowing, attendant on such extensive destruction of soft parts. He, notwithstanding, under generous regimen contrived, while in Hospital, to keep up a good condition of body. His prin-

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cipal regret lay in the unavoidable disuse of his tobacco-pipe. The picture exhibits him after the wounds had all healed, without outward nose or ears, but with two beautifully white and perfect rows of teeth.

Cancer of the Upper Lip.

It is a curious circumstance that M. Cruveilhier denies positively the existence of cancer in the *upper* lip. He says, in his *Descriptive Anatomy*,—"Une particularité, tout inexplicable, c'est que les boutons cancéreux des lèvres qui sont si fréquens, ne se remarquent jamais à la lèvre supérieure, mais toujours à la lèvre inférieure." However true it may be that cancer is very much more frequent in the lower lip than in the upper, it certainly is *not* true that it is exclusively limited to the former. The following statements are conclusive on this point.

A. a. 9.—Incipient cancer of the upper lip, removed from a woman, seventy-one years of age. The disease appeared, at the time of the operation, to be local, but the patient died about a year and a half after, from its revival in the glands of the neck, without any recurrence of it in the lip.

A. a. 10.—Cancer engaging the right side of the *upper* lip, leaving the angle free. The patient was a tall, thin, unmarried woman, about sixty years of age. There is no report of the result of the operation.

A. a. 12.—Ulcerated cancer of the angle of the mouth, engaging equally both upper and lower lip. A flattened fungus may be seen on the inner surface, at the angle.

Extirpation of Healthy Tongues.

A. a. 35.—Two healthy tongues extirpated by evil-disposed persons, during the lifetime of the sufferers, with a view of preventing their giving evidence at a criminal trial.

A gang of ruffians waylaid the unfortunate men, threw them down, knelt on their chests, and squeezed their throats, so as to make their tongues protrude from their mouths. This being effected, the tongues were laid hold of, pulled forcibly forwards, and cut out from near the root, by a short, sharp, curved weapon, like a gardener's knife. The victims of this atrocious deed recovered without ligatures to stop bleeding, or other special surgical treatment; and regained, afterwards, sufficient power of speech to convict and bring to punishment their assailants.

Perforation of the Œsophagus by a Bougie.

A. a. 44.—Stricture of the Œsophagus behind the pericardium. The tube is narrowed to the extent of several inches, its walls at this place are thickened, and its mucous membrane corrugated longitudinally: in some parts there is a depressed, ulcerated surface; in others fungous projections. About midway between the cricoid cartilage and strictured part, there is a distinct oval ulcer, with spongy surface and fungous edges.

The history of this preparation is instructive. For a long period, the occasional introduction of the bougie gave relief; but finally, the operation became injurious; as on the last occasion, the bougie perforated the central ulcer observable in the preparation, and passed into the posterior mediastinum. From that moment the patient sank, and died in a few hours.

There might be many tallies found to this preparation and this history. Patients have been not unfrequently dispatched to "the undiscovered country" by Œsophagus bougies. Surgeons should be chary of their use.

Perforation of the Subclavian Artery by a Bone in the Œsophagus.

A. a. 47.—The Œsophagus of an old beggar-woman, stuffed with fragments of beef and bone, which caused death by suffocation. The sharp point of the bone having pierced the tunics of the Œsophagus, wounded the right subclavian

artery, which taking origin from the left part of the arch of the aorta, and crossing thence to the right, between the œsophagus and spine, happened to lie in the way. The projection of this artery may have even been, in part, a cause of the detention of the foreign body in the tube.

Salivary Calculus Extracted.

A. a. 85.—Salivary calculus, about one inch long and the thickness of a quill. It is slightly curved, and uniformly large from end to end. It was extracted from the submaxillary duct of a female, twenty-four years old. One end appeared at the mouth of the duct, so as to admit of being seized by a forceps. It came out easily. The patient was only inconvenienced afterwards by stiffness, and pain in moving the tongue. It is several years since the removal of the calculus, and no further complaint arising out of it has been made.

Singular Atrophy of the Stomach.

A. b. 93.—A portion of stomach in a singular state of atrophy. The organ, though much enlarged, contained only air; it had rejected all sorts of food. It was so thin in some parts, as to be almost transparent. The part preserved may give some idea of the state of the entire organ. The muscular coat appears to be that most reduced; the villi of the mucous surface, though very indistinct, are discernible; the serous coat is the most perfect. The patient was a lady of about sixty-five, of full, bloated person, though extremely temperate in habits. For a time she laboured under all the rational symptoms of thoracic aneurism, or incipient hydrothorax, puzzling many skilful physicians. Some months previous to her death, she had continual, and unappeasable hiccough, nausea and vomiting: she could not take food, great difficulty of breathing set in, and she died exhausted. The heart was found attenuated, flabby, and soft; and there were several osseous deposits, in the larger arteries.

Cancer of the Stomach.

A variety of preparations of cancer of the stomach are described. On the whole, they prove the too frequent obscurity of the symptoms attending that melancholy disease. If we might be allowed to generalise from what we have seen, we should say that medullary fungus of the stomach is less frequently attended with decided symptoms than scirrhus of it. The following case, as a case, countenances that idea.

A. b. 120.—Huge fungus in the stomach, springing from the greater curvature. The other parts of the organ are sound: it remains of the natural size; and the pylorus is free from disease. This was the case of a lunatic, of middle age, who enjoyed an excellent appetite; was not particularly emaciated; and never made any complaint, leading to a suspicion of the stomach being diseased.

Dangers of the Bougie.

We are tempted again to allude to these, for the purpose of enjoining caution in the use of the œsophagus bougie—an instrument which, we fear, has been sadly abused. We cite another instance of a false route taken by it.

A. b. 146.—Enormous fungus of the stomach protruding in part, into the œsophageal orifice. Food could not pass the obstruction; and a bougie attempted to be introduced, opened a way into the peritoneum behind the fungus. The natural line of direction of the œsophagus with the stomach is completely altered. The œsophagus above the point of obstruction, is dilated and thinned. A bougie points out the course which the instrument took.

Stomach of an Ironmonger.

With an account of this we shall stop. The case, indeed, has been published, but may be new to some of our readers.

A. b. 188.—Stomach of a lunatic, in which were discovered various metallic substances; such as, the rusty remains of large nails, long pieces of thin iron-like portions of iron hoop, the worn-down blade of a knife, a large iron buckle, with a pewter tongue, as that of a saddle-stirrup, an iron hinge of a box or door, and several pieces of metal, too thin and worn to admit of their original use or form being in any way recognised. Four or five pieces in the same state, were also found in different parts of the intestinal canal. One, in particular, a piece of iron, four or five inches in length, lay in the transverse arch of the colon. On opening the abdomen in the first instance, the hollow viscera all presented an unusual dark tinge; and their fluid contents were of the same colour. There was no peritonitis. The preparation shews the stomach to be of inordinate size, and greatly thickened, both in its mucous and muscular tunics. The mucous glands are likewise hypertrophied; in size they resemble those in the crop of some granivorous birds, more than those of the human stomach. The rugæ, especially in the pyloric third of the stomach, are unusually prominent, being elevated into thick, firm, vascular masses, like fungous growths. There is at one particular spot, an ulcer with hardened edges. The œsophageal and pyloric orifices are both very much dilated.

If we close our notice of this volume here, it is rather because it admits of almost indefinite extension, than because we have exhausted its stock of interest and instruction. The profession may judge from what we have given, the value of what is behind, and we can say sincerely that the work is one fraught with information to those who will peruse it with attention. We repeat what we have before observed, that its utility is eminent as a book of reference.

NUCES PHILOSOPHICÆ; or the Philosophy of Things, as developed from the Study of the Philosophy of Words. By *Edward Johnson, Esq.* No. I. January, 1841. Price One Shilling. Simpkin and Co.

This periodical is dedicated to the members of the Provincial Medical Association, and is evidently the production of a clever and well-read man, who has studied philology with great assiduity. The nature of the work, however, is not sufficiently developed in this number to enable us to judge accurately of the performance. The dedication is very ingenious, and, we would say, rather too forensic. Indeed we think that Mr. Johnson would have figured at the bar, where he would have been able to make the "worse appear the better cause." In the present instance he has laboured hard, and with very specious and plausible arguments to prove that the study and practice of the medical art and science require a greater breadth and depth of intellectual power than that of either law or divinity. This may be, and probably is true. But the prudence or propriety of strongly urging comparisons, which are proverbially odious, may be well questioned, as coming from the acknowledged pen of a medical writer. Mr. Johnson has been hard upon the lawyer in particular; and we fear he has not been quite justified in considering that the only faculty of the mind called into operation by the lawyer is—MEMORY.

"And what are the intellectual attainments necessary to qualify the law-student for the exercise of his profession? To have (if it were possible) the *statutes at large* by heart—to store his memory with acts of parliament, and all such other writings as define the laws—and to have on the tip of his tongue, ready on all occasions, to hang a thief or save a thief, the previous decisions of previous judges which can be brought to bear on doubtful cases. Here again the faculty of the mind called into operation is *still the memory only*. The knowledge of the most profound lawyer consists solely in his recollection of the *opinions and writings* of other men, whether in the shape of acts of parlia-

ment or of adjudged cases—or rather, it is not knowledge at all—it is but fallible *opinion*, and consequently may be, and much of it has already been, *proved to be false*. To the law-student also, three years are, as I believe, the allotted period of study. Nor am I questioning either the propriety of this term, or the necessity of law-learning. I am only showing that it does not require a high order of intellect to master it, nor any large endowment of philosophical knowledge to become a profound lawyer." xi.

Whoever has listened to the orations of a Curran, a Brougham, a Romilly, or any other eminent barrister, and heard him range through the fields of literature and science for arguments, illustrations, and decorations, would candidly confess that a mere technical memory of the "statutes at large," could go but a short way in supplying the orator with materials for the defence of his own client, or the crimination of that of his antagonist.

That the passage above quoted, should have brought a hornet's nest about Mr. Johnson's ears, might have been readily anticipated—and accordingly his "philosophical nuts" have been cracked with sledge hammers by the legal tribe. We do not think that the policy of the provocation can be at all defended; but as the publication will be inevitably injured, if not strangled by the lawyers, while the divines will assist in the work of destruction, it behoves the medical profession to patronise the work, and carry it safely through the storm. For, although we cannot help considering the *comparison* which the author has drawn in favour of the medical profession, as injudicious; yet, it is clear that it was well-meant, and consequently entitled to our sympathy and support. We therefore solicit the patronage of the medical public in favour of this new periodical.

GAS-BATHS.*

These and the Mud-baths to be presently described, are becoming very fashionable in Germany. From every inch of surface in the peat bog around Franzensbad, carbonic acid gas is constantly issuing forth in such quantities that its extrication is audible and visible, wherever there is water on the ground. To have a reservoir of this gas, it is only necessary to build a house, and prevent the carbonic acid from being dispersed in the air. It is there collected, and baths and douches are constructed for its ready application to the body generally, or to any particular part thereof. The gas-bath or building at Franzensbad, stands within thirty or forty yards of the Franzensquelle, and from the ground of this house, which is of very moderate extent, there issue 5760 cubic feet of gas every twenty-four hours!! There is little doubt that the extrication of carbonic acid is equally plentiful in any and every part of the bog in which the town is situated. I should think that to go to sleep on the ground, in a calm Summer's night, would be inevitable death. As it is, the good people of Franzensbad, inhabitants and visitors, must be perpetually inhaling an atmosphere well impregnated with this gas. I do not suppose, however, that this is productive of any injurious effects.

The gas is conveyed into the bath through a cock at the bottom, and the patient, being either dressed or undressed, sits down on a little stool, while a wooden lid or cover, with a hole that fits tolerably close to the neck, is placed over the body, the head being in the open air. They have small tubes through which they can apply the gas to the eyes, ears, or any part of the body, in a stream, the velocity of which can be augmented or diminished at pleasure.

* From Dr. Johnson's "Pilgrimages to the Spas in Pursuit of Health."

They can also diminish the intensity of the gas by applying a piece of muslin or taffeta over the pipe, or over the eyes or ears that are subjected to the stream. I did not try the gas baths here, but at Marienbad I used them generally and locally, accompanied by my kind friend Dr. Herzig of that place. Standing in the bath, the cock was turned without my being aware of it, and, in a few seconds, I felt a sense of heat ascending quickly along my legs towards the body. Without thinking of the gas I stooped, and put my head down to the aperture of the tube, by which I inhaled as much of the carbonic acid as caused a sudden faintness. Dr. H. and the bathman quickly extricated me from my perilous situation, and I went on with the bath, while my head was in the open air. I found that the following representation of the sensible, and physiological effects of the bath, as given by Baron Aimé, is sufficiently correct. 1. The gas excites and even irritates the skin, producing a pricking, and soon afterwards a strong itching on the surface, accompanied by heat, and ultimately perspiration. 2. The gas stimulates the nerves of all parts to which it is applied. I had a stream directed on my eyes, which caused a most profuse flow of tears, with strong sense of heat. When it was applied to my ears, a sense of heat, and a considerable noise were the effects produced.* 3. It is asserted by physicians of the Continent that this gas is extremely useful when applied to old, ill-conditioned, and irritable ulcers, as soothing and promotive of healthy discharge, and ultimately of cicatrisation. 4. Although the breathing of this gas is as mortal as that of the Grotto de Cane, yet if diluted with plenty of atmospheric air, it is thought that it might prove serviceable in some states or stages of phthisis, asthma, &c. 5. The action of this gas on the eyes and ears I have already mentioned. Its remedial agency is much extolled in certain disorders or diseases of those organs, attended with atony or morbid irritability of their nerves and structures. 6. These baths are chiefly employed in cases of paralysis attended with stiffness, feebleness, or spasmodic movements. 7. In chronic, inveterate affections of a gouty or rheumatic nature—chronic sores—glandular swellings—and various cutaneous complaints, the gas baths are applied, and, as is affirmed, with success. 8. In uterine affections, irregularities, &c. attended with torpor, debility, and irritability.

Upon the whole I am disposed to think that the gas baths are active agents, and that they may be made useful ones, when carefully applied.

MUD-BATHS.†

Among the novelties—transcendentalisms, or, as some would call them, extravaganzas, of Germany, the MUD BATHS deserve the "passing tribute" of a short notice. But alas! there is "nothing new under the sun"—or under the earth. To the mud of the Nile and the Ganges, virtues almost miraculous—even the creative power of life—have been attributed, time immemorial. Who does not know that the life of MARIUS was preserved by a mud-bath in the Minturnean marshes?—The instincts of animals, too, are not to be overlooked. We all know the extreme tenacity of life possessed by eels—owing perhaps to their frequent use of mud-baths. Swine are proverbially subject to cutaneous complaints, especially measles; to prevent or cure which, Nature seems to prompt the daily employment of mud-baths, in the Summer season. A remarkable instance of the force of instinct is afforded by the Indian buffalo. That animal

* The Baron Aimé suggests the more frequent application of this gas to certain complaints of both sexes which are regarded with no small anxiety by both parties. *Verbum sat.*

† From Dr. Johnson's *Pilgrimages to the Spas in Pursuit of Health.*

immerses himself daily, during the hot season, in mud, up to the very nose; by which means, we may conclude that he avoids the jungle fever, or cures himself of liver-complaints. The alligator offers another example. When he has swallowed a buffalo or a tiger, he buries himself up to the nose in mud, on the oozy shores of the Ganges, no doubt for the promotion of digestion.

It is unnecessary to multiply the virtues of mud-baths. Those who desire ocular proofs must repair to Franzensbad in Bohemia, where they will see—not mud but bog-baths in perfection; though they are now also got up very well in Marienbad, Carlsbad, Teplitz, and other fashionable spas.

I have alluded to the plentiful supply of bog which the immediate vicinity of Franzensbad offers to the mud-bathers. This earth contains the following materials:—viz. The fibres of plants not decomposed, and whose organization is recognizable—matters soluble in water, such as vegetable substances rich in carbon, and of a yellow colour;—sulphate of lime—sulphate of magnesia—sulphate of iron—alum—bituminous extractive matter—oxide of iron—fine sand.

Thus we see that the mere boggy material of the mud-bath contains many substances that may and do exercise a considerable physiological action on the body; and medicinal agency on the constitution.

The peat bog is carried to the neighbourhood of the baths, and there allowed to dry to some extent. It is then sifted and separated from the woody fibres and coarser materials, when it is mixed with the mineral water of the Soeusenquelle into the consistence of a very soft poultice. In this state it is heated by steam to a temperature varying from 80° to 100° of Fahrenheit, when it is ready for the bather, being worked up by means of wooden instruments and the hands into a complete black amalgam. I took the mud-bath here, at Marienbad, and Carlsbad, and do not regret the experiments. I confess that, at first, I felt some repugnance, not fear, in plunging into the black peat poultice; but when up to the chin (temperature 97°) I felt more comfortable than I had ever done, even in the baths of Schlangenbad, Wildbad, or Pfeffers. The material is so dense, that you are some time in sinking to the bottom of the bath—and I could not help fancying myself in Mahomet's tomb, suspended between Heaven and Earth, but possessing consciousness, which I fear the prophet did not enjoy. There was one drawback on the mud-bath, or peat-poultice. We cannot roll about, like a porpoise or whale, as in the water-bath, without considerable effort, so dense is the medium in which we lie; but I found that I could use friction to all parts of the body, with great ease, in consequence of the unctuous and lubricating quality of the bath. After twenty minutes' immersion, I felt an excitement of the surface, quite different from that of the common mineral warm baths—even of those of Wisbaden, Kissengen—or Schwalbach—attended, as I fancied, by elevation of spirits.

Whilst I was thus philosophizing, like Diogenes in my tub, the thought came across my mind that I would have a dive in the sable mixture. I knew that the sun and winds had so tanned my complexion, that it would not suffer by immersion; and if my hair should get dyed black, the change would certainly be for the better. I therefore disappeared like an eel in the mud; but, on emerging from the bog, I thought I should have been suffocated before I cleared my face from the tenacious cataplasma. I had now been nearly half an hour in the Schlammbad, and prepared to quit, as the mixture was fast cooling down, and the heat could not be kept up, as in the water-bath. On raising myself slowly and perpendicularly, with at least twenty pounds of mud on my surface, I caught a full length portrait of myself in the glass, and I think the view would have sickened Narcissus of self-contemplation for ever!! I was really shocked at my sudden metamorphosis into the Ethiopian, and began to doubt whether I should ever "change my hue" again. The warm water-bath was close at hand, but I had the presence of mind not to jump into it at once, as I should, in that case, render it a black wash-tub; but by clearing away with both hands, some sixteen or eighteen pounds of peat varnish from my body, I rolled into

the clear fluid, where it required half an hour's rubbing and scrubbing to purify myself from the "Bain de Boue." Both on this, and on subsequent occasions, at Marienbad, Carlsbad, and Teplitz, I experienced a degree of exhilaration, strength, and elasticity from the mud-bath, which I had never done from any other. The iron in these baths, instead of corrugating the skin, as I expected, imparts to it a glossy or satiny feel and softness quite peculiar—and much more in degree than the waters of Schlangenbad.

The bog-earth is well picked, and in some places sifted, so as to remove all the fibrous and woody parts, leaving the fat unctuous substance to be mixed with the mineral water of the place. In general these baths produce a pricking sensation, and sometimes an eruption on the skin, an effect which I did not experience.* They are therefore much used in old and obstinate cutaneous complaints, as well as in glandular swellings, sequences of gout, rheumatism, &c. They are very exciting to the nervous system, and should not be used where there are any local inflammations, or much general excitability of the constitution. They do not lose their heat so rapidly as the water-baths, and consequently they maintain the volatile and penetrating principles longer than the latter. They are much employed in paralysis, chronic ulcers, and cutaneous affections.

Here and at other spas where mud-baths are employed, I met with several veteran warriors, whose aching wounds reminded them too often of battle-fields and bloody campaigns. They almost all agreed in attributing more efficacy to these than to the common baths—and I think, from what I have seen, heard, and felt, that there is much truth in these statements. The Schlamm-bads have one advantage over the others, which is more prized on the Continent than in England—the facilities which they afford the bathers, both male and female, of receiving morning visits from their friends while in the mud, and that without any violation of delicacy, propriety, or decorum; for there, persons are more completely veiled than in any dress, even of the most dense and sable furs of Russia. An English lady of rank, at Teplitz, was visited by her physician and friends while immersed to the chin in peat-bog. They read to her, and conversed with her till the signal was given for exchanging the black varnish for the limpid and purifying wave, when they retired.

The rules for taking the Franzensbad waters and baths do not vary materially from those of other spas. The following concise direction is from the pen of Dr. Clarus.

"A complete course of these waters requires at least four weeks. When it is thought desirable to take of more than one source, the change from one well to another should not be abrupt, but gradual. We may commence with one glass of the Salzquelle, and each day increase by the glass, till, in a week, we come to six or seven glasses, taken at intervals of a quarter of an hour. After this period, the Salzquelle is to be decreased, glass by glass, and replaced by the Cold Sprudel. This change is to go on during the second week. At the end of a fortnight, the Cold Sprudel is to be changed, in the same gradual manner, for the Franzensquelle, which is to be continued till the end of the course, unless some circumstances arise to alter the arrangement. Those who are of very weakly constitutions, and especially if they labour under any pulmonary complaint, will do well to add some warm milk or whey to the mineral water."

The baths are generally taken about two hours after breakfast. They ought not to be taken unless the bowels are daily opened, either by the waters or by aperient medicine. The temperature of the baths should be about 98° of Fahrenheit, or that of the blood.

* Dr. Clarus, Dr. Granville, and others state that the skin exhales an acid odour, and even feels salt to the tongue for several hours after leaving the bath. This I did not perceive in my own case at all.

Baron Aimé has collected from various sources a host of cases, of all kinds of maladies, cured or relieved by the waters of Franzensbad; but into these it is unnecessary to go. Here the tyrant fashion has caused a comparative desertion for the more attractive localities, if not more sanative springs, of Marienbad, Carlsbad, and Teplitz. The qualities of the mud, and the profusion of the gas, at Franzensbad, however, may probably turn the current by and bye in its favour.

PRACTICAL OBSERVATIONS ON DISTORTIONS OF THE SPINE, CHEST, AND LIMBS; TOGETHER WITH REMARKS ON PARALYTIC AND OTHER DISEASES CONNECTED WITH IMPAIRED OR DEFECTIVE MOTION. By *William Tilleard Ward*, F.L.S. Member of the Royal College of Surgeons, Fellow of the Royal Medical and Chirurgical Society, and Corresponding Fellow of the Medical Society of London. Renshaw, 1840.

This is a Second Edition. We shall not, therefore, notice it at length, but content ourselves with selecting a few points for observation.

Our author's mode of treatment may be said to hang on his physiological views, not perhaps very novel or striking, with respect to muscular power and perfection. That power he concludes to hinge:—

1. On the state of the functions of respiration and circulation, and that increased strength is a consequence of increased vascularity and circulation of blood in the part, and *vice versé*, a want of tone and power, of a deficient supply of it.

2. On the degree of exercise, or frequency with which they are called into action.

3. On the mental energy, or power of volition exerted on them.

4. That the most effectual means of increasing muscular strength, is by the frequent exercise of the power itself, and, consequently, the preservation of the healthy actions of those functions by which it is influenced.

5. That the muscular parts have a constant tendency to contract, by which they adapt themselves to the state of the limb, or parts to which they are attached.

To muscular debility Mr. Ward attributes much in the production of spinal curvature, unattended with caries. The proportion of the various kinds of spinal curvature to one another is thus stated by our author from his own experience. Of two hundred and eighty-two cases of spinal curvature there were:—

Of curvature to the right side without disease	230
Of curvature to the left side without disease.. .. .	10
Of posterior curvature unaccompanied by disease.. .. .	9
Of posterior curvature with disease	30
Of that which I denominate incurvation, i. e. projection of the lumbar vertebræ within the pelvis	3

Mr. Ward attaches some degree of importance to the condition of the intervertebral substances. After noticing the fact of the diurnal loss of stature from compression of them, he goes on to observe, that the greater strength of the intervertebral substance in persons advanced in life, in connexion also with the muscular structure, may be assigned as the cause of their general exemption from this disorder; Mr. Pott having remarked that he had "never seen it at an age beyond forty." In youth the cartilages are less firm than in the adult age, and from a cursory review of the above experiments it would appear, that to the want of firmness of the intervertebral substance may be ascribed the occurrence of incurvation; if we, however, take into consideration the uses of the

muscles, it will be seen, that when in the erect position, if they act in a natural manner, the cartilages will not be pressed upon in an undue direction, either laterally or anteriorly, so as to produce distortion, but that the only effect of the superincumbent weight will be for the time to decrease the height of the individual, by bringing the bodies of the vertebræ more closely together. On the recurrence to the horizontal position, the spine will resume its proper length. Less consequence has been attached to the influence of the cartilages and ligaments in the production of this disorder, than the importance of their functions to the motions of the spine may seem to demand. This has arisen, however, from observation both in health and disease, that their relaxation or firmness, increase or decrease of size, power or weakness, will be commensurate with the tone and vigour of the muscular structure; that the diminished strength of the ligaments and cartilages, is a sequel of muscular debility; and that, therefore, by giving power to the muscles, an accession of strength to the ligaments and intervertebral substance will result as a matter of course.

Our author thus describes what he calls *Incurvation of the Spine*.

"There is an affection of the spine consequent upon paralysis, that has not been noticed, that I am aware of, by any author: it consists in a falling down of the dorsal and lumbar vertebræ within the pelvis; it is not of very frequent occurrence; I have seen only three cases. It may be denominated incurvation of the spine. The lumbar vertebræ project anteriorly towards the pubis, causing a great hollowness of the back, and giving rise to a peculiar waddling gait in the person affected with the disorder.

In this particular form of distortion, in addition to the ordinary means, I have recommended that the patient should make use of chairs as little as possible, and rather sit on a couch, or on the ground, with the legs folded in the manner of the Turks, or as tailors are seated when at their usual employment."

Mr. Ward's plan of treatment consists in regulated diet—the exclusion of improper muscular habits—the horizontal posture—and judicious muscular exercises. He observes of the inclined plane—

"The inclined plane has been much used for the purpose of confining the body to a particular position, in the recumbent state, for a considerable length of time, without allowing any alteration of posture. This is extremely disagreeable to the patient, and sometimes productive of distressing feelings, without being compensated by any particular advantage that may not be gained by allowing rest on a mattress or sofa, without restraint on the motion of the body.

It has been remarked to me by patients themselves, as well as by those around them, that they arose from the former not only without feeling refreshed, but sometimes greatly fatigued; and if we reflect, that the alternations of position in the body throughout the day, and even during sleep, are so many changes to relieve the contractions of the muscles, and that in this confined attitude a great number of them must be kept in action during the time it is persevered in, and that they cannot support long continued exertion without great weariness supervening, we shall be at no loss to discover why such an effect should be produced."

A favourite exercise is this,—a weight appended to a cord is passed over a pulley, and the other extremity, having a strap attached to it, is fastened round the patient's head; the pelvis being fixed, the patient is directed to raise the weight by drawing the head and trunk backwards, and to repeat this effort until fatigue is produced. The frequency of repetition of this exercise of the muscles, and the weight of the body to be raised, must, of course, depend on the patient's strength. After each effort, it is advisable to take rest, by lying down on a couch, or sofa, in order that the muscles may not be placed on the stretch, and thus prevented from recovering themselves. This mode of exercising the muscles is equally applicable to the anterior curvature of the spine, when not connected with caries, as to that which takes place laterally.

Friction and Shampooing are also beneficial. He objects to the opinion

entertained at times and given that the patient will "grow out" of her distortion. He has not found such predictions true. He adds with candour,—

"I beg here not to be understood, as wishing to assert, that I have in every instance effected a complete restoration of the spine to its proper shape in cases of lateral spinal curvature, unaccompanied by disease of the bone; a regard for truth compels me to admit, that in several cases of long standing, treated by me upon the plan before mentioned, and where, in addition to the above means, extension has been resorted to, I have failed; the curvature originally, perhaps, between an inch and a half and two inches, has been reduced to within a quarter of an inch, beyond which, an advance could not be made; although I have every reason to believe that my patients have strictly followed my injunctions in every respect, both with regard to exercise, and the strict observance of the recumbent posture. In these cases there was no suspicion of diseased bone; if there had been, I could not have used the same means (extension) without producing mischief. The average rate at which improvement takes place, presuming the curvature to be of the extent of an inch and a half or two inches, is, half an inch the first month, and one-eighth of an inch every succeeding two months. I have witnessed some cases, where the diminution of the curvature has proceeded more quickly; these are, however, rare, occurring either in natives of India, or very young subjects, or where the progress of the distortion has been unusually rapid."

Deformity of the Chest.—There is a chapter on this. The malformation termed "chicken-breast" is that more particularly dwelt on. We agree with Mr. Ward on the tendency of the chicken-breasted to pulmonary as well as to cardiac disease—on the gravity, therefore, of the affection. Passing over his theory of its causation, we come to his mode of treatment.

"The method which I have employed with regard to the local means in those cases, where the spine has been exempt from disease, has been that of placing the intercostal muscles and those connected with the anterior part of the chest on the stretch, by placing the patient in a standing position, with the back against a cylindrical piece of wood, and the arms extended backwards. By this means an extension of the pectoral muscles is produced, and they are thus brought into full action upon the ribs, as well as the muscles of the abdomen which are opponents to them. The position, as well as the condition of the muscles, may be imagined by that of a person in the act of attempting to throw a summerset backwards. While in this situation, the patient is desired to take deep inspirations. I direct manipulation, and afterwards percussion, to be employed for one or two hours during the day, gradually increasing them in force according to the influence produced on the patient.

In addition to these means, I usually desire the patient to suspend the body by the arms, and similar modes of exercise, with a view to promote the full action of the pectorales, serrati magni, and postici muscles, &c. on the ribs, to produce the greatest possible extent of elevation of the ribs and sternum, and consequent expansion of the chest.

The benefit to be derived from this plan will, of necessity, depend much on the age of the patient; if the sternum and cartilages have not yet become completely ossified, although the disease may have existed for a considerable length of time, a greater degree of benefit may be expected by a steady perseverance in the means recommended, than if the individual be at an age when the bones have acquired their solid state; and even in the latter case, much may be done, by the increase of muscular power, for the relief of the patient."

In a chapter of miscellaneous observations, Mr. Ward attributes a good deal of certainty to muscular exercise. It is, literally, his *primum mobile*. For example. The state of spasm, says he, in which the sterno-cleido-mastoid muscle is sometimes found, denominated wry-neck, usually has its source in disorder of the stomach and bowels, and, in general, yields readily to purgatives, anodynes,

and fomentations. But if the disease should have become permanent, it admits of a cure by the means above-mentioned.

A young lady, between eight and nine years of age, had been troubled a considerable time with spasmodic twitchings of the muscles of the face and head; various remedies had been used, purgatives, mercury, arsenic, without success. Believing that the stimulus of volition might be beneficially employed, she was directed to carry a light piece of wood standing upright on the head, thus rendering it more difficult to balance; and by perseverance in its use, after some time, the disorder was entirely removed. This, no doubt, was an instance of nervous disorder, and such are curable and properly enough treated by muscular exertion. But the wry-neck that depends on chronic inflammation of the muscle or its sheath is undoubtedly not so manageable.

Then, again, the curved legs of rickets have been made straight by exercise.

"The effect of well-directed exercise, persevered in for a considerable length of time, was also exemplified in the case of a young lady, *ætat.* 11, who had the bones of the thigh and leg curved forwards, in consequence of rickets, at a very early period of life. I had seen the general health suffer much from the use of instruments, and determined therefore to try the effect of exercise only. She was directed to raise herself, and support the weight of the body on the phalanges of the foot, as often and as long at a time as she could every day till fatigue was induced; repeated twice in the day. This was continued between three and four years; at the expiration of that time, the curvature of the bones had disappeared. In this case occasional aperients, and cold bathing during the summer season, were also resorted to."

And club-foot may be managed with equal success by the same means.

Retardation of the Pulse by Exercise.—"The influence of exercise in diminishing the frequency of the pulse, is not undeserving of notice in this place. In the case of a young gentleman, whom I directed to use considerable muscular exertion, the first effect was to produce a considerable increased quickness of the pulse; at the expiration of a quarter or half an hour, however, when the immediate acceleration from exercise had abated, the number of beats had been reduced twenty and thirty in a minute. The same effect I have also frequently witnessed in adult age. In a gentleman of forty years of age, whose pulse had regularly, during two years, beat ninety strokes in a minute, it fell to eighty, and subsequently to seventy-five, on using daily strong muscular exercise."

In gouty concretions of the joints, excitement of the muscles, whether by voluntary exercise, or other modes, as those of friction, shampooing, or percussion, or a combination of all of them, may be employed with success, observing the caution before given to bring into action the muscles which move the affected joints, and to limit the friction, &c. to those parts only, rather than apply it to the seat of disease.

Mr. Ward recommends muscular exercise in the treatment of stammering, and no doubt the proper use of proper muscles is of service. He concludes with a remark which we quote—some, he says, who have not hitherto directed their attention to muscular exercise as a remedial agent, may perhaps think it has been recommended too indiscriminately in disorders apparently so dissimilar in their nature. It has however this advantage, that provided what may be termed the dose be properly regulated and apportioned to the strength and capability of the patient, no injurious consequences will ensue from its use.

And no doubt there is truth in this, though candour must own that Mr. Ward has his hobby.

THE SURGICAL ANATOMY OF INGUINAL HERNIÆ, THE TESTIS AND ITS COVERINGS. By *Thomas Morton*, one of the Demonstrators of Anatomy in University College, London; and formerly House Surgeon to the Hospital of the same College. Illustrated with Lithographic Plates and Wood Engravings. London. Taylor and Walton. 1841.

Mr. Morton is favourably known to the anatomical world by his previous publications on the groin and perineum. The present work is a worthy successor to those, and will prove, we do not doubt, as great a favourite with students. The descriptions are drawn up with care, accuracy, and conciseness—the plates are lucid and illustrate the text agreeably and usefully—and the price at which the work has been got up is as moderate as could be wished.

A TREATISE ON STRICTURE OF THE URETHRA, CONTAINING AN ACCOUNT OF IMPROVED METHODS OF TREATMENT; WITH AN APPENDIX, ON DILATATION BY FLUID PRESSURE IN THE TREATMENT OF URINARY CALCULUS AND OTHER DISEASES. By *James Arnott*, M.D., late Superintending Surgeon in the Honorable East India Company's Service. Second Edition. London, Sherwood, Gilbert, and Piper. 1840.

This is a second edition of an ingenious work. We shall not go into it, but merely pick out the gist of Mr. Arnott's views—his mode of dilating strictures of the urethra.

"A tube of oiled silk, lined with the thin gut of some small animal to make it air-tight, and attached to the extremity of a small canula, by which it is distended with air or water from a bag or syringe at the outer end, with a stop-cock or valve, to keep the air in when received, is a description of the apparatus.

The thinnest silk ribbon of different breadths, with the edges neatly sewed together, so as to make it tubular, and then varnished with prepared linseed oil, which dries upon it, and leaves the surface perfectly smooth and soft, is what I have found to answer best. The gut of any small animal will form the lining; but that of the cat is preferable on account of its thinness and strength. The canula may be of elastic gum, or of the flexible metal used to make the metallic bougies, or of silver; and the injected air may be retained, either by a stop-cock at the outer extremity of the canula, or by a valve at the silk tube or bag itself. This last method is the only one applicable to the insulated dilator, which is a short length or bulb of the lined silk, to be distended and left in the canal, and having a bit of canula in the centre, for the free passage of the urine; the patient while wearing it being little incommoded by its presence.

The dilator, when empty, is introduced or withdrawn with the greatest ease to the patient.

As the shape of the silk tube is in our power, it may be made so as to have any desired form when distended; and the sizes of dilators may be ascertained with as much precision as of metallic bougies. It has the important property also of being permanent in its dimensions. On one or two occasions, where a silk tube of the size wanted was not ready, I substituted sewed bladder; but I found that in the moisture and warmth of the urethra, this yielded in the course of a little time, so as to become of double the original diameter, thus stretching the sound canal on each side of the stricture beyond what it could bear: and in any case where strong pressure were required, such a tube would burst before the effect could be produced.

It possesses strength to bear any degree of pressure which can be useful, for the membrane of the urethra itself would be torn, before a strong silk tube would give way: it is almost needless to add, that by injecting more air, the pressure in any given case is increased, or that it is diminished by opening the cock or valve."

"The manner of using the dilator is as follows: Though in general it passes as easily down to the stricture as a small bougie, yet, on some occasions, especially in irritable urethræ, unaccustomed to the presence of instruments, I have preferred introducing it through a smooth canula, in the manner already mentioned. As soon as the bag is sufficiently within the stricture or strictures, (if more than one exist in the canal,) as much air is to be injected into it as the patient can easily bear; and during the time it remains in the urethra, the future admission or escape of the air is regulated by his sensations; that is, if the feeling of distension abate, more may be injected; but if it should increase into pain, a little of the air may be allowed to escape."

In an Appendix Dr. Arnott thus notices the application of fluid pressure to the surfaces of the body.

"Pressure applied to the surface by bandages, is the principal remedial means in a great many diseases, as chronic inflammations, glandular swellings, diseases of the joints, ulcers, dropsies of various kinds, &c.; and operates by supporting the weakened vessels, promoting absorption, and otherwise influencing the vitality of the diseased structure. But to many parts of the body bandages are applied with so much difficulty as to be a serious impediment to their use; with every care, equable pressure can scarcely be made or maintained by them, and from the difficulty of increasing or diminishing the pressure, which is consequently rarely done in the intervals of the Surgeon's visits, much suffering or mischief often arises.

For the bandage, the equable pressure of elastic air may be substituted with great advantage, by enclosing the part to be subjected to it in a close *double* case of india-rubber cloth, of rather larger dimensions than the part, in order that, upon being inflated, a thin stratum of compressed air may surround it. The outer side of this case, or wherever it is not supported by the surface of the body, must be of strong material to resist the requisite degree of pressure, but the side in contact with the skin should be thin, and of larger dimensions than the other, for the purpose of its coming closely in contact with all the inequalities of the surface.

This case, or air bandage, may have its edges kept in contact by buckles or other convenient means; a double stocking, or long glove may be substituted in affections of the extremities. The inflation can be made by a syringe, or by the contrivance used for filling air beds and pillows.

Pressure by condensed air has already been employed in a few of the affections above enumerated, but so imperfectly, from its being greater at the margin than elsewhere, and thus forming a sort of ligature, as to counterbalance its advantages, or even to be positively injurious. The mode now proposed, enables us to apply a perfectly equable pressure to the most irregular surface, and to moderate or increase it with ease, as the sensations of the patient or other circumstances may require. Should frequent intermissions in pressure be advantageous, they can thus also be easily obtained. By the substitution of such means for the bandage, pressure may not only prove more advantageous in cases where it has already been in use, but be extended to other analogous affections, in which, on account of the imperfect means of application, it has not hitherto been employed."

SURGERY IN PARIS.

IN our last number we made some extracts from Dr. Markham's "OBSERVATIONS ON THE SURGICAL PRACTICE OF PARIS," and exhibited some of the sayings and doings of the hospital surgeons in that city. It is so important to those gentlemen themselves, to us, to our common profession, and to science, that what is wrong should be blamed, what is remediable remedied, that at the risk of being tasked with nationality and prejudice, we shall not shrink from the office of censors. It is not that we wish to drag mere errors to light—to brand mistakes—to lacerate the feelings of the diffident and nervous—to lash opinions contrary to our own. Let those who will play the part of executioners on imperfections—that is not to our taste, nor is it our custom.

But disregard of experience sanctioned by time and supported by numbers, recklessness of consequences, culpable carelessness, looseness of statement and mendacious assertion, insensibility to human suffering, and a passion for display at the expense of the well-being or the life of others—these are crimes towards society as well as science, and the interests of both demand their punishment. Whether the Parisian surgeons be guilty or not guilty, we shall not decide. Those who have watched them are the witnesses, and their evidence it is which we state at the bar of public opinion. If that evidence be unfavourable, we regret, but would not conceal it—if unjust, the aggrieved have ample means and talents for defence. Nor can they, if candid, object to the publicity or even criticism that would put down offences against good feeling, sound knowledge, and morality.

We proceed with our extracts from the work before us, selecting prominent facts or observations without (for it is impossible) an attempt at connexion or analysis.

1. *M. Velpeau on the practice of publishing Successful Cases.*

The occasion which called forth M. Velpeau's observations on the practice of publishing "successful cases" of operations, was an instance in his own practice of extirpation of one of the superior maxillary bones. This operation, to all appearances, was satisfactory in its results: and two months after its performance might be said to have succeeded perfectly; but M. V. was not satisfied, and did not lose sight of the individual. His suspicions were not unfounded; for, five months from the date of the operation, the disease began to show itself again; and this, which in most instances would have been undoubtedly given to the world as a successful case, proved in reality the very reverse. M. V. warned his auditors against taking for granted these vaunted cases; assuring them that there was no part of medical literature in which less confidence could be placed. He mentioned also, at the moment, several cases of phlebitis, which had been published a few days before in the *Gazette des Hôpitaux*, as having been successfully treated by M. Liafranc; showing clearly, from the description itself, that these were in fact no cases of true phlebitis at all, but inflammation of the cellular tissue surrounding the vein, or, what M. V. denominates "external phlebitis."

We fancy this applies to England as well as France.

2. *M. Roux's reprehensible Operations for Malignant Tumors.*

Dr. Markham tells us that he has seen M. Roux remove an encephaloid tumor of the testicle in its last stage of degeneration, extending towards the abdomen along the course of the cord—a tumor larger than two fists—it was an operation of great difficulty, and of great pain and suffering to the patient, but was performed in a masterly manner; the enormous wound left was covered with charpie, and ulceration and suppuration proceeded in their course for a month

favourably, when there appeared a small tumor rising up in the centre of the wound, as if proceeding from the abdomen; it increased rapidly, and when it had gained the size of an egg, M. Roux again ordered the patient into the operating theatre, and again removed a tumor: a third was not long in showing itself, and M. Roux, at last deeming all attempts to remove an immovable disease useless, sent the man into the country to die.

Surely this is unworthy of the knowledge and humanity of the day. It is just what occurred in this country many years ago, before the nature and properties of the malignant morbid growths had been properly investigated or could be understood. We need not add, that such practice would not be tolerated in an English hospital now. What surgeon in this country would amputate under these circumstances?

A man presented that well-known aspect which is an infallible indicator of the progress of cancer; the thigh was enormously swelled, and covered with blue veins; a small part of the highest part of the thigh appeared unaffected by the disease, and here M. Roux amputated the limb: the operation was most difficult and prolonged; a very great quantity of venous blood was lost; the man fainted again and again after the operation, and then rallied, but he never recovered from the shock; his face was sunken and pallid and mournful, his pulse quivering, and agitation extreme, and he died on the third day after the operation. The fungoid disease proceeded from the centre of the bone, of which it had completely altered the texture; the muscles, also, all round the thigh could not be distinguished from the diseased mass.

3. *Loss of Sensibility from Injury of the Infra-Orbital Nerve.*

The man who was the subject of this injury, had fallen, and in falling had struck the lower part of the orbital ring violently against some projecting object; this blow broke in, and caused a depression of the bone above the infra-orbital canal, and thence pressure on the infra-orbital nerve, and the consequence was complete loss of sensation in all the parts which it supplies with filaments.

4. *Extirpation of the Fifth Metacarpal Bone. Inflammation of the Carpal Joints. Advantages of Extirpation of the First Metatarsal Bone.*

M. Blandin performed this operation on the hand of a young man: the bone was affected by caries, was much enlarged, and had produced several fistulous openings in its vicinity; in this operation, which M. Blandin performed by a simple incision carried along the inner side of the hand, the synovial membrane, which is continuous through the bones of the carpus, must be opened, and the consequence in this case was violent inflammation of the whole of the hand, suppuration took place beneath the fascia, and numerous openings were made in the hand to give exit to the pus—after a time the inflammation subsided, but the lower part of the wound, whence the bone was taken, did not heal. Three months after the operation, this fistulous opening still existed, and gave exit to a glairy discharge; the little finger was quite motionless, and the patient did not seem to have the slightest power over it, so that probably some of the other bones were affected in this scrofulous subject; what motion the finger might have regained, if the operation had been successful, it is difficult to say, but from analogous ablations of bone, as of the jaw, &c. it is well known that deposits of a cartilaginous nature supply well the deficiency of the bone which is lost—the inflammation consequent on this operation is well worthy of remark, and in respect to this character it may be compared to the following operation of extirpation of the first metatarsal bone of the foot where a different arrangement holds as to the synovial membrane. This operation M. Blandin performed for caries and enlargement of the bone; the consequent inflammation here was much less than in the last case, and the reason may no doubt be because only one joint is opened. This operation is neither difficult nor dangerous, and is

undoubtedly much preferable to taking away the whole of the great toe, for when this is done, it happens, that the foot may turn over, from want of its natural support in the ball of the great toe. M. B. observed that it was much better to take away the whole of the bone, than only a part, for in the latter instance, a troublesome caries often ensues, and, as had happened to himself, may require a second operation. As the articulation of the first metatarsal bone, with the internal cuneiform bone, is situated at exactly the middle point, between the heel and the extremity of the great toe; an incision is made from this point along the inner border of the foot, to the first phalanx of the great toe, and a transverse incision is made at the tarsal extremity of this incision. The tarsal, or *greater* extremity of the bone is first dissected out, and then the operation is easily completed. The anastomotic artery passing between the two first metatarsal bones, is almost always opened, and was in this instance. M. B. took one branch up on the dorsum of the foot. The result of this operation I cannot give, as when I left Paris, four months after the operation, the subject of it was still in bed with a fistulous opening in the wound."

5. *Wound of the Fore-arm—Diffuse Inflammation of the Deep Cellular Membrane—Propriety of lengthened Searching for Arteries?*

A healthy man, young and vigorous, was brought into the Hôtel Dieu, with a lacerated wound of the lower and front part of the fore-arm. He had, while in a state of inebriety, struck his arm down upon a glass, and broken it in pieces—several of the fragments were sticking in the soft parts. The depth of the wound, which was contused and lacerated, was not clear; from its situation the ulnar nerve was probably divided; and from the great loss of arterial blood, which had taken place, probably the ulnar artery also; compression, above and below the wound, in the course of the ulnar artery, M. Blandin thought very unadvisable; and, although the bleeding had ceased, he sought for the extremities of the divided artery, and tied them—an operation which required much dissection and labour, from the laceration of the surrounding tissues; the wound was then dressed with straps and bandage. The next day there had been no bleeding, and the wound appeared well. On the third day one of the ligatures came away; but there was swelling above the wound, and pain, so the plaster straps were removed. On the fourth day the swelling was increased, and there was every appearance of violent inflammation beneath the aponeurosis of the fore-arm; it was swelled in all directions, presented an unusual roundness, and that most remarkably in front; the skin was tense and *colourless*, pressure gave a sensation of deep tension, and obscure fluctuation, œdema of the cellular tissue, distention of the superficial veins (from the pressure on the deep veins of the fore-arm)—a kind of insensibility in the limb. One hundred leeches were ordered to be applied to the fore-arm, and a low diet enjoined. On the fifth day there was the same swelling, more insensibility, heat hardly natural, much fever, and the leeches had not at all relieved the symptoms, and there was every reason to believe that gangrene had already commenced; three long incisions were made through the aponeurosis, in the length of the fore-arm. On the sixth day the skin had a blackish tint, and gangrene had evidently seized the fore-arm and hand; to prevent its extension three incisions were made in the arm, and camphorated applications were ordered to be applied. The low fever was much increased, the pulse weak and quick, and delirium had occurred during the night, the belly tympanitic, and general prostration very great. Cold applications were ordered to the head, and slightly stimulating medicines to be taken. During the course of this day all the symptoms increased, and the patient died.

We make no question whatever that this was essentially a case of diffuse inflammation and suppuration in the intermuscular cellular membrane. We doubt if any thing, save, possibly, early amputation, could have saved the man. But

most assuredly a *hundred* leeches would not do so. Such practice is of very questionable propriety, in diffuse inflammation of cellular tissue it is probably highly injurious. Such local depletions must sink the powers of the part and of the system, and tend to prevent the formation of that barrier of lymph which is the only chance of safety that nature has to offer.

Dr. Markham asks if the lengthened search for the ulnar artery was right. This question seems to him answered by the case of a patient of M. Velpeau, a man, who in the same week, (during the height of the carnival,) met with a very similar accident. This man, also in a state of drunkenness, struck his arm down on a glass, broke this, and opened the radial artery, just above the wrist. M. V. merely applied pressure, and the wound healed without an accident.

Dr. Markham refers to another case of interference, which he deems, with justice, injudicious. A man fell down some steps on a bottle, broke it and wounded (with a deep clean cut) the parts above the wrist, across the course of the ulnar artery. A great quantity of arterial blood followed at the moment; he was however immediately dressed by a surgeon, with compresses and bandages, and sent to the Hôtel Dieu. M. Blandin saw him twenty-four hours after the accident; the bleeding had quite ceased, and the arm was quite easy. M. B. removed the bandages, &c. enlarged the wound, and after half an hour's search, (rendered difficult by the tendon of the flexor carpi ulnaris having been partially divided by the glass,) the ulnar artery was found untouched. Of course the operation did nothing, but inform the surgeon that the artery was sound, except causing much pain to the patient, and a probability of subsequent inflammation.

Dr. Markham thinks that in wounds of the ulnar and radial arteries *near the wrist*, compression, well applied, is of itself sufficient to arrest the hæmorrhage, and that the search for the wounded extremities of the divided artery, (generally rendered difficult by the laceration of the soft parts around, caused by the injury,) is unnecessary, productive of much pain, and very liable to be the cause of violent inflammation.

If the vessels cannot be reached with facility, we agree with Dr. Markham in considering it better to trust to careful compression. We have ourselves had a case of wound of the ulnar artery near the wrist with a knife, one of the radial where it dips between the heads of the abductor indicis, and one of the anterior tibial, where it dives between the metatarsal bones, all of which did perfectly well with compression. Of course if the ends of the wounded vessel present themselves, or can be tied with little disturbance to the parts, that would be the better plan to adopt.

6. *Deceptive and Fatal Wound of the Chest.*

A married woman entered the Hôtel Dieu, on account of a wound in her back from a knife. She said, (as it turned out falsely, for she had been purposely stabbed) that her husband had accidentally struck her with a knife, which was *broad* at the point.

On examining the seat of injury, an incised wound was discovered at the internal and lower border of the scapula, about an inch long, running in the direction of the length of the ribs, between two intercostal spaces, just external to the angles of the ribs. There was much effusion of blood round the edges of the wound, the lungs appeared perfectly intact, the vesicular murmur was clear, and no crepitation could be distinguished. There was no embarrassment of the respiration, no spitting of blood: hence no sign of injury of lungs, or effusion of blood or escape of air into the pleura; so that this could scarcely be considered otherwise than as a simple incised wound; in fact, such was the distinct diagnosis of the case. The length of the wound was to be accounted for by the breadth of the point of the knife. The case was held as of the slightest importance; but still, as M. B. thought on the bare possibility of a deeper injury, he ordered blood to be taken from the arm.

On the second day the wound was closed, and everything was perfectly well; on the third, she thought of leaving the hospital, as her cure seemed complete; she, however, for some cause, did not obtain her dismissal. On the seventh day (three days ago,) her case suddenly presented quite a different aspect; her respiration was difficult, quick, and jerking; pain in the side on pressure; supuration in the wound, and the discharge mixed with the coagula of the ecchymosed blood; a friction sound was heard in the chest. She was immediately ordered to be bled, and thirty leeches were applied over the seat of pain, then a poultice, and the strictest diet enjoined. The next day she was more depressed; the chest was dull to percussion at the lower part, and respiration inaudible below; but at the upper part of the lung ægophony was distinctly recognized. She was very feeble, and her intellects were confused; a large blister was applied over the chest. Yesterday she was more enfeebled; a yellow tint of the skin and conjunctiva, intimated some affection of the liver, whether arising from continuous inflammation or secondarily. To-day the dullness is increased over the chest, and the respiration is more difficult; the effusion of pus into the cavity of the pleura was very evident; it flowed out in abundance from the external wound mixed with flocculi. She died on the following day.

On examination of the chest, the pleura was found (on the side where the wound existed,) highly inflamed, and a great quantity of pus existed in its cavity; the lung was compressed to the back part of the chest, and a wound existed in the pleura, corresponding to that on the outer side of the chest.

This case is certainly calculated to inspire caution. It would seem that, after the first, the attention directed to it was insufficient, and it was only when grave symptoms arose that *that* was re-awakened. All wounds of the parietes of the great cavities should be watched.

7. *Difficulty of Matter escaping through Muscles.*

"As to the difficulty of liquids passing through openings in muscular fibres, i. e. openings parallel to their length, I might mention a case where M. Lisfranc and another surgeon, distinctly determined the presence of pus under the pectoral muscle, an incision was made through this muscle, but not a drop of pus, or fluid of any kind, followed. Both the surgeons were amazed: 'Donnez-nous une prise de tabac,' said M. L.; and then suddenly the thought struck him, to separate the lips of the wound, on doing which, a jet of pus immediately sprung out."

8. *The Politest People in the World.*

M. Lisfranc, remarking on a doubtful case of a tumor on the metacarpal bone of the thumb, said, it was a pity it had not fallen into the hands of some villainous perruquier, he would have made a fine lesson of it, running through every thing, *prepared* upon the subject. Il faut le couper, continued M. L., to find out its nature, and what does it signify if it is lamb or mutton, beef or veal, the only practical point is its extent and relations.

To understand the force and the good taste of this, our readers should be apprised that the "villainous perruquier" means every other hospital surgeon of Paris. Can we wonder that the profession holds a low place in public estimation in France?

9. *Rough Surgery.*

A woman, æt. 64, of hale and healthy appearance, came into the Hôtel Dieu, under M. Blandin's charge. She journeyed to Paris, from the country, under the advice of the surgeon who attended her there, to undergo amputation of the leg, for this tumor, which he deemed of a cancerous nature.

She says that about three or four years ago, she, for the first time, noticed a small swelling below the internal malleolus, a tumor, of whose origin she could give no account, except that it might have been caused by the pressure of the heavy wooden shoes worn in the country. She then experienced no pain or inconvenience from it, and she took no further notice of it; but it has gone on gradually and slowly increasing up to the present moment. It is situated immediately below the internal malleolus of the left foot, is round, a little larger than an egg, slightly flattened above; it moves with the motion of the foot, and seems to have no connexion with the ankle-joint, or the tibia; its base is hard, like an exostosis, and it has a hard fluctuation in the centre—is elastic; the skin surrounding it is of a violet hue, and varicose branches of the internal saphena vein course around it. The disease is quite local; neither the foot nor the leg is affected by it, motion is quite free, and the lymphatics and ganglions healthy. The woman's general health is good: but she complained that her sleep was latterly somewhat broken by starting pains in her toes (which might be supposed to depend on the pressure of the tumor on the plantar nerves.)

M. Blandin thought it was a tumor arising from inflammation of the periotæum, which had been probably bruised, or in some way injured, the base having become hard, from the deposition of osseous and cartilaginous matters. As it seemed attached only to the astragalus and calcaneum, M. B. determined to make a crucial incision over it, dissect back the flaps, and attempt its removal from its connexions; if this was impossible, or if it turned out to be of a fungoid character, and projecting deeply among the muscles, nerves, &c. of the foot, M. B. decided, that he would immediately amputate the leg.

The operation of dissecting this tumor was tedious, and appeared to give very much pain to the patient; when it was completed the tumor was ascertained to be situated in the body of the posterior tibial nerve, and was a cartilaginous deposit among the filaments of this nerve, developing itself in a direction towards the foot, and spreading among the nervous fibrillæ of the internal and external plantar nerves. M. B. having determined that it was impossible to remove the tumor, at once amputated the leg, at the junction of the middle with the inferior third of the limb, and by the circular operation.

The day after these severe operations, the patient was in a high state of traumatic fever, and her nervous system seemed much agitated. On the second day, the stump looked well, and she appeared more tranquil, and the fever was certainly diminished. On the third day she was worse, her face was very expressive of suffering and dejection. She had been delirious during the night; her pulse quick and feeble, tongue dry and brown, the stump unhealthy in appearance, and no sign of vigorous action in it; her respiration was hurried, and she died during the day.

There can be no doubt that this patient died from the harshness of the shock upon her nervous system.

10. *Operations for Hæmatocele.*

M. Velpeau rejects M. Roux's* practice of extirpation of the testicle, and Dupuytren's, of taking away only a part of the tunica vaginalis. His method is either to evacuate the sac, if its contents are fluid enough, by means of the trochar, and then to throw into it an injection of iodine. If the cyst contains coagulated blood, &c. then he makes an incision into it, large enough to give free exit to its concreted contents: M. V. avers that this operation succeeds perfectly.

11. *Hernia Humoralis—Epididymitis.*

"This disease is by many authors considered as an inflammation of the body

* "I am not certain if this was not Boyer's operation."

of the testicle. One of the latest English writers says, 'the body of the testicle swells, with great pain and tenderness.' M. Blandin, is of opinion, that in ninety-nine cases out of a hundred, the epididymis* and *vas deferens* are the seat of this inflammation, and not the testicle. Several cases, which he pointed out in the Hôtel Dieu, and which I observed in other hospitals, strongly confirmed this view, which is strengthened by anatomical considerations. It is difficult to conceive, how so dense coverings as those which surround the testicle, could admit the rapid swelling which so often takes place in this disease; and if the progress of the malady is carefully watched from its onset, it is not difficult to determine that this swelling is really seated in the epididymis and *vas deferens*. The epididymis, when much inflamed, spreads out, swells, and embraces the whole of the testicle, so that when the inflammation is at its height, this cannot be felt. But before it has reached this point, it often happens, that in some part of its circumference, the testicle may be felt of its natural size and hardness. M. B. pointed out this circumstance several times, and it was clearly appreciable, the hard body of the testicle being felt, where it was as yet uncovered by the swelling epididymis. In all the cases (and they were a great many) which I observed, there was not the slightest necessity of calling in the aid of sympathy to account for this swelling; for the sensations of the patient could follow the inflammation proceeding along the course of the cord."

No doubt of all this.

12. *The Starch Bandage.*

"The treatment of nearly all kinds of fractures by the starch bandage, is now almost generally adopted by the Parisian surgeons: M. Lisfranc and M. Jobert (of St. Louis) alone, I believe, raise their voice against the practice. It is adopted in the practice of Velpeau, Roux, and Blandin, and with the most favourable results. The invariable practice of all the surgeons who employ this method, is, to dress the fractures for the first days merely with the common splints and bandages; but when the moment of inflammation has passed, and when the process of union may be supposed to have commenced, and absolute rest rendered requisite, to apply the immoveable apparatus."

M. Roux treats all his fractures during the first interval by a linseed-meal poultice, smoothly applied over the fracture; then bandages, pads, and splints: these are changed every day, until the starch bandage is applied. This meal poultice is sometimes, but not always, employed by M. Blandin. Dr. Markham does not know how these gentlemen manage with fractures of the thigh.

13. *Complete and Incomplete Fractures of the Clavicle.*

In infants, said M. Blandin, in whom the periosteum is very strong, this is often not ruptured, and then there is no displacement. This, sometimes, though rarely, happens in adults, and has been often the cause of error and mistakes. M. B. said, that he was the first who noticed this species of fracture. There is no displacement when the fracture is between the coraco-clavicular ligament, and the acromio-clavicular articulation, so that this displacement is easy in some cases, impossible in some, and rare in others. M. B. had treated a case of fracture without rupture of the periosteum, and consequent displacement in an infant at the Hôpital Beaujon. There is no difficulty in recognizing this fracture, if its possible existence be only kept in view. Dupuytren almost entirely abandoned the treatment of this fracture to nature, merely placing the arm

* Engorgement of the epididymis may be always destroyed, M. Lisfranc observed, by leeches along the cord. It seldom degenerates into scirrhus, but rests a long time in the same state. There are, however, exceptions; where it does, therefore, always combat these engorgements.

of the individual in a sling; but he was decidedly wrong. The pieces ride on each other, and hence irritation and inflammation of the periosteum, great pain, and consequent deformity. Dessault has pointed out the very best treatment of this fracture; has shewn the necessity of continued extension, of raising the arm, and separating the fragments, by placing a cushion in the axilla, of pressing forwards and inwards over the chest, and of bandaging the whole arm; the great object of all being to force the shoulder backwards and outwards. M. B. followed this treatment in two cases, applying the starched bandage to fix the arm, and the results exceeded any thing Dr. Markham had seen in England.

We would observe that many surgeons have noticed the incomplete fracture of the clavicle, as of other bones, which takes place in the young. In these cases, however, the bone breaks like a green stick, and it is not the periosteum only that is untorn. We would add our testimony, such as it is, to the superiority of Dessault's plan of treating fracture of the clavicle.

14. *How are we to Operate for Phymosis?*

M. Ricord always performs the operation of circumcision in this complaint, when it is possible, but when the phymosis is complete, when the prepuce is small, and tightly applied to the gland, then another operation must be performed. In performing this, M. R. is not contented with the common incision, carried along from the opening of prepuce to the base of the glans, (on the upper part of the penis;) but after making this, he practises another in a parallel direction, on the lower part, at the frænum; then seizes the flap left on either side with a pair of forceps, and cuts them off with the scissors. This operation is long, comparatively, and painful; but M. R. declares that the result, which is really excellent, well repays the extra pain, for scarcely any deformity ensues; and this is of the highest possible importance, added M. R. for there is no part of the body where surgery ought to be more coquettish.

In performing this operation (and the same rule applies in all other operations on the penis) the points of the incision should be marked out by nitrate of silver, at the spot where the knife's point should make its appearance at the base of the glans. In circumcision, also, the line of incision should be marked; a narrow, fine, sharp knife should be used. After making these observations, M. R. proceeded to operate on a case of the nature mentioned above, where the prepuce was firmly applied to the glans, and was very short. M. R. unwittingly made use of a very large, dull knife, and did not mark out the point where the incision ought to terminate. The consequence was that the knife, when pushed forwards, instead of piercing the skin at the base of the glans, puckered up the skin before it, so that when the knife was forced through, and the incision completed, the skin of the dorsum of the penis was ripped up very nearly to the pubes.

M. R. said that he had seen Dupuytren and his own predecessor at the Hôpital du Midi, cut off the glans penis as well as the prepuce, in operating for phymosis by circumcision. M. Blandin's operation, and M. Velpeau's also, consists merely in one single incision along the dorsum of the glans, through the prepuce.

We have ourselves, when the prepuce has been very long, performed an operation similar to M. Ricord's. We were not aware that it was done by any but ourselves. In most cases, however, it is unnecessary, simple division of the dorsum of the prepuce sufficing. If there is no part of the body where surgery should be more "coquettish," there are few where pain is less liked, and the majority of patients think one cut enough. By-the-bye, a good illustration that of French surgery, when M. Ricord having said that a sharp knife and a caustic mark were indispensable, took a blunt one, and made no mark at all! On the advantage of the former we quite agree with him; the necessity for the

latter is not so obvious, if a surgeon takes care to manage the outer fold of foreskin with his thumb, so that he shall transfix it at the proper place.

15. *Death from an Autoplastic Operation for Fistula Urethrae.*

The following case is not uninstructional, nor is it, perhaps, without its warning lesson.

The patient was a healthy man, about 45 years old. The disease had existed from infancy, and no remedy had been tried for its cure, when he presented himself at the Hôtel Dieu. The fistulous opening was situated in the median line in front of the scrotum, it appeared very small when the penis was retracted, but much larger when it was extended, being then nearly half an inch in length; there was no doubt as to its being an urethral fistula, for a probe could be passed directly into the urethra. On being more narrowly questioned, he at last admitted that when a child he had put a ring round his penis, and this was no doubt the origin of the fistula, and of the destruction of the urethra at the part, for M. Blandin, in introducing a bougie observed, that the lower part of the urethra was entirely destroyed. M. B. determined to attempt its cure by Earl's method of operating, by an autoplastic operation—for this purpose a portion of the integument above (nearer the root of the penis) the fistulous opening, about eight lines square, was entirely dissected off—the callosity around the opening was also removed, and then a flap half an inch long was dissected up from below the fistula, and was then drawn over it backwards towards the root of the penis, (thus making the penis, as it were, describe a curve with the concavity below) and was united by sutures to the broad flat surface from which the skin had been already removed. M. B. hoped, by this means, to prevent any small quantity of urine, which might pass from the urethra, being a hindrance to adhesion in every part of the surfaces brought together—an elastic catheter was passed into the bladder. The second day after the operation the penis and the parts around the wound were enormously swollen, slight union appeared to have taken place in one point, the urine passed freely by the catheter, and the patient had noticed none passing by the wound; one or two of the pins (by which the sutures were formed) were removed, by reason of the great constriction they caused; the next day (third) no further union seemed to have taken place, and all the sutures were removed. After this the patient (who was a most irritable subject, and who never ceased lamenting the day he applied at and entered the hospital) went through a series of misfortunes, which terminated in death; high inflammation arose in the parts, no more union took place, and that which had taken place was destroyed; pus, blood, and urine, began to flow from the wound; the man became very restless and feverish; two or three abscesses formed around, incisions were made to evacuate them: the inflammation appeared to have destroyed part of the urethra, for after eighteen or nineteen days from the operation, infiltration of urine took place, and death was the consequence.

16. *Dr. Markham a warm Patron of the Speculum.*

“The virulent abuse which the use of the speculum vaginæ has excited, as being immodest and unnecessary, can only be sanctioned by those who are ignorant of its purport, and have never seen its employment. Those who have witnessed its assistance—(I might say, the absolute necessity of its use, for it appears to me, to be to the vagina and uterus, what the stethoscope is to the lungs)—cannot for one moment hesitate to affirm, that humanity must gain infinitely by its aid. An unbiassed individual who has once seen its proper application, cannot but be struck by its utility; and this once proved, of course the idea of immodesty ceases at once.

To what does the English physician attribute those acute pains which females suffer in the middle and early periods of life? the violent pains felt in the hypo-

gastric and lumbar regions, and in the nates, at the back of the sacrum, in the groins during walking,—and these pains, accompanied by an abundant discharge, of a white colour? The physician can give no cause. The very name itself applied to these complaints, the *fluor albus*, shows plainly how the effect has been taken for the cause; and the futility of the treatment employed, the endless round of injections and tonics prescribed, might be enough at least to give a suspicion that the true nature of the disease had yet to be described."

Now we plead guilty to "abuse" of the speculum—we have said that its employment as a common means of diagnosis is immodest—we have protested that, in the majority of cases, it is unnecessary. And, under Dr. Markham's fire, we do not flinch from repeating this, nay more, we assure him, that should he endeavour to carry into practice in this country Continental notions of what is *decent*, he will assuredly make shipwreck of his character and fortunes, as some of our travelled youth have done. We do not mean to rip up an argument only just skinned over, and as sore as recent, nor to defend the opinions we have expressed—opinions not founded on any affectation of boisterous prudery, but the simple utterance of those sentiments of delicacy which honourably characterise English society. We *do not* say that the speculum should be proscribed—but we *do* say that it is used to an excessive, and a disgusting extent in the Parisian hospitals. If we wanted evidence of this, we should find it in Dr. Markham's own queries and statements. As if English physicians were so ignorant as to know nothing of the general symptoms of congestive and inflammatory affections of the uterus,—as if "the touch" could give no useful indications—as if, in all cases, the filthy speculum must be introduced—as if the following opinions founded on its constant employment were not proof of the fallacy of the results to which such employment leads!—

"*Chlorosis* is caused, some say, by alteration of the blood; and I do not deny, says M. L., that cases of this nature may exist, and that there may be some therapeutical agents capable of inducing an alteration in this bad constitution, and may cure the disease; but it is also, most undoubtedly, caused, in some instances, by engorgement of the uterus, and then are these preparations perfectly useless. And is the physiology of the disease so difficult as to be incomprehensible? When a new function first takes on its office, is it always subject to disturbance? and to this disturbance is not the uterus subject at puberty? Is not this the pure induction, spite of the books of the perruquiers? These engorgements are to be known by the low sinking pains in the lower part of the abdomen, pains in the loins, back, groin, &c. and above all, are to be felt either by the rectum, or the vagina, or by both. M. L.'s treatment is entirely antiplogistic, and consists in local and general bleedings most especially."

We fancy that the cases of chlorosis which would be benefitted by local and general bleeding must be few indeed. But we quit the subject.

17. *Amputations in Paris.*

Circular Amputation the Favourite.—"I never once saw the flap operation performed in Paris: the circular appears the only one recognized by the Parisian surgeons. This steadfast adherence to the ancient method, I have no means of explaining, as I never heard mention made of the flap operation, even as a subject of discussion."

Then surely M. Lisfranc must have turned round. By the way, this is an answer to those who are always telling us that it is only a few bigotted surgeons in England who still stick to the circular operation. Paris has been pointed to, as the city of flaps. Tout au contraire—not a flap is to be seen there! But that there should be no discussion, no "palaver," as the negro consultants have it, on the subject, is queer. Malgaigne's little book, last published on these matters, would not lead us to expect this. After all, we suspect that the results of the circular operation are the best.

18. *Want of Success after Amputation.*

"As regards the healing of the stump, it is almost impossible to make a comparison between the results of the flap operation, now so generally practised in England, and the results of the circular, as performed at Paris,—for several of the leading surgeons still hold it, both by precept and example, as highly unscientific, to attempt union by the first intention, and their reason is, because this first intention so very often fails;—but why does it fail? No man in England can guess; but I think, that if any unbiassed individual will pay a visit to any of the large Parisian hospitals,—follow the changes in the wound of an individual, who has just entered for an injury, being previously in perfect health,—if he will notice the characters which almost every wound takes on—the ever existing erysipelas, and its distressing consequences, he will at once allow that there exists some other cause than the idiosyncrasy of French limbs, or the particular nature of the healing process itself, to account for its failure. Moreover, are all the rules of the operation properly attended to? I doubt this. The heat in the hospitals is most oppressive; ventilation, or opening of a window, is not permitted; each bed in covered, above, and on all sides, by curtains; and, what seems almost incredible—certainly incomprehensible—when an individual has undergone an operation, the curtains of his bed are doubled on every side, and he is covered up with as much care from all currents of air, as if he were an exotic in the hotbed of a gardener. If the records of the medical annals of the Hôtel Dieu for centuries past could be opened, I do fear, that they would contain a most terrible picture. Every epidemic has raged in this hospital, and always with the most frightful results. To give an instance: in 1746, in the month of February, of twenty women attacked by puerperal peritonitis, in the wards for lying-in women there, scarcely one recovered; in the years 1774 and 1775 one in every seven women who were attacked, died, and seven out of every twelve who were delivered there were attacked. In one winter Dupuytren lost twenty-one out of twenty-six amputations below the knee. And let any one who wishes to be convinced, visit that hospital at any time, and see erysipelas always present—often raging—in the surgical ward; and he will have much less difficulty than he had before, in understanding why the wounds from operations almost always fail to heal by the first intention. No doubt, the Hôtel Dieu presents the worst picture of Parisian hospitals; but the same circumstances prevail, to a greater or less extent, in every hospital. Moreover, as to the dressings to produce union, are they such as are appropriate? M. Blandin (who is the only gentleman who attempts the first union) says, no; and in fact, accounts for the failure of his *confrères*, through their faultiness on this point. M. Lisfranc never attempts union by the first intention; and he adds, occasionally, another peculiarity to his operation, viz., slitting down the lower flap, according to the invariable proceeding of Baron Larrey; and this, with the intention of being enabled, when he pleases, and when granulation has commenced at the bottom of the wound, to bring the parts into more perfect contact. The only possible advantage which this addition seemed to me to give, was its allowing free issue to any puriform matter, and preventing any collection taking place. Its obvious inconvenience, in uselessly enlarging the wound, struck me as quite condemnatory of its practice. M. L. always dresses the stump the day following the operation. M. Roux heals stumps by the established method; though now and then he attempts the first intention; but his rule of practice I could not discover. The only good stump I saw in his ward, was one healed by the first intention in fifteen days after the operation. The appearance of a large, red, flat surface, covered with granulations, and often with a bone projecting from the centre, was a curious view to an English eye, and it was one with which I was made quite familiar in M. R.'s wards. The results of his practice, I should say, were unlucky, for I have seen exfoliations of bone take place—abscesses form in all directions—

in fact, I believe, never an amputation (where union by granulation was attempted), without some accident. The reason of the frequency of these secondary accidents may, I believe, be in great part sought in the unhealthiness of the Hôtel Dieu, for they happened also to M. Blandin; but in part also, from the nature and conditions of the cases on which M. Roux operates. Thus, I have seen M. R. amputate an arm below the shoulder, in an individual in the very last stage of hectic and feebleness, and whose whole arm was a mass of suppuration: two days after the amputation, an abscess was opened beneath the *pectoral* muscle, and an enormous quantity of discharge evacuated; the abscess reached in every direction, and the man died on the third day. In the dressing of stumps, M. Roux, as in all other cases of operation, is guided by rule; and this, I believe, prescribes the fifth day after the operation as the day for the first dressing.

M. Blandin always attempts union by the first intention; but he follows a method somewhat peculiar to himself in his after-treatment of the stump—a method which, as he himself affirms, is the cause of the greater success of himself than of his colleagues in the sequelæ of his amputations. It consists in invariably examining the wound the day after the operation, and for the following reasons—that no injury can result from the examination; that, by this, the state of the parts can be exactly determined; that, if necessary, by removing one of the plaister straps, free issue may be given to any discharge that may have accumulated in the wound; and that, if union has taken place in the whole length of the wound externally, (for M. B. asserts, that it is totally impossible, under any circumstances, for union by the first intention to take place in the depth of the wound,) it is necessary to introduce the forceps to break down the adhesions in some part, (the part where the ligatures project,) in order to give free issue to the confined seropurulent discharge, which almost always collects; that the confinement of this discharge will, and very often does, cause great swelling of the stump, pain, abscesses, and total prevention of union by the first intention. These reasonings of M. B. seem founded on true and just grounds, and are well worthy of notice; and, as I said before, want of attention to some of these points, may have been in part, cause of the failure of the first union in the hands of other surgeons at Paris. M. B. considers torsion as effectual in arresting hemorrhage of the arteries, as the ligature, and has successfully employed it on almost every artery that is divided in amputation, but never employs it at present, except occasionally, to demonstrate its effects to those who follow his clinique; and for the reason, that torsion really retards, instead of favouring adhesion by the first intention. In applying torsion, great tearing of the surrounding parts is caused, and consequent inflammation is thus often produced, arising from the difficulty of seizing the vessel itself, and from seizing and twisting more parts than the vessel. In regard to amputation below the knee, M. B. observed, that the operation immediately above the ankle-joint, was much less grave than that in the point of election, and that statistics proved this, (which we can very well imagine beforehand), for in twenty-five amputations immediately below the knee, twenty-one deaths took place, while in fifty cases at the lower third of the leg, six only died. [M. B. did not mention whence these statistics came; but in reading some remarks on Dupuytren's practice, I was struck by the circumstance mentioned in them, viz., that in one unfortunate season, when the Hôtel Dieu was particularly unhealthy, M. D. lost twenty-one out of twenty-five amputations. The statistics given by M. B. seem too preposterous, if we consider the deaths as occurring under ordinary circumstances.] M. B. said, that he fancied he had seen gangrene happen in amputation in the lower third of the leg, from the small quantity of nerves and vessels there."

What do our readers say to this? The faults of French surgery are nowhere more glaring than in the after-treatment of amputated limbs.

THE ANATOMY OF THE NERVES OF THE UTERUS. By Robert Lee, M.D. F.R.S. Physician to the British Lying-in Hospital, and Lecturer on Midwifery at St. George's Hospital. London: H. Bailliere, Regent Street. 1841.

Of our worthy and able friend, Dr. Robert Lee, it is not necessary for us to speak in commendation. His unwearied industry and professional enthusiasm have obtained for him an European reputation in pathology—we may now add, in anatomy. Right or wrong, the investigations which have produced the work before us, stamp their author as one destined for philosophical discovery.

Dr. Lee first cites, for the purpose of exhibiting the confusion that obtains in description and opinion, the conflicting statements of authorities respecting the uterine nerves. These we need not repeat—they lead only to the conviction that fresh and more accurate inquiries are necessary—and that, prior to the dissections which our author has made, the records of none were complete or convincing.

Dr. Lee describes the nerves of the gravid uterus in the seventh month—those nerves in the sixth month—from two specimens, in the ninth month—in the fourth month—in the third month—ten days after delivery—the nerves of the unimpregnated uterus—and, finally, the nerves of the uterus in the mare.

The first preparation of the uterine nerves was made by our author in April, 1838. It was deposited in the museum of St. George's Hospital, on the 1st of October of that year. The nerves were of the *Gravid Uterus in the Seventh Month*.

2. Nerves of the Gravid Uterus in the Sixth Month.

On the 18th December, 1838, a woman in the sixth month of pregnancy, died in St. George's Hospital, a few hours after the fœtus and its appendages had been expelled. The description of the nerves is exceedingly precise, and we shall introduce it.

"Behind the uterus, the aortic plexus divides into the right and left hypogastric nerves. These nerves soon sub-divide into a number of branches to form the right and left hypogastric plexus. Each of these plexuses, after giving off several branches to the ureter, rectum and uterus, descends to the side of the neck of the uterus and terminates in a large oblong ganglion. The left hypogastric plexus first sends off from its upper and anterior part, some small branches to the ureter. About midway between the aortic plexus and the ganglion at the cervix, the hypogastric plexus sends off several considerable branches directly into the upper part of the cervix uteri, which spread out under the peritoneum of the body of the uterus. The hypogastric plexus then gives off a large branch, which passes between the ureter and uterus, to the trunks of the uterine veins and artery. This branch enlarges and becomes thin and broad as it approaches these vessels, and terminates in a great plexus of nerves, which completely encircles them. This plexus is joined below by several branches, which proceed from the anterior and superior part of the ganglion, and which pass on the outside of the ureter to the plexus, around the vessels. From the inner surface of the ganglion, several branches go to this plexus which run on the inside of the ureter, so that a loop of nerves surrounds the ureter, as well as the uterine artery and vein. From the plexus surrounding the vessels, three large trunks of nerves proceed upwards with the vein to the upper part of the uterus, enlarging as they ascend. The posterior branch sends off in its course smaller branches, which accompany the ramifications of the uterine vein, on the posterior surface of the uterus, and spread out upon the inner surface of the peritoneum. Passing upwards beyond the junction of the spermatic with the uterine vein, and running between the peritoneum and a great plexus, situated

on the body of the uterus, it spreads out into a web of thin broad branches and slender filaments, some of which are inserted into the muscular coat and peritoneum, and others follow the veins and arteries to the fundus uteri, and pass with the vessels into the muscular coat of the organ.

The middle and anterior branches closely adhere to the uterine vein as they ascend and form around it several plexuses which invest the vein. From these plexuses, branches are sent off to the anterior surface of the uterus. These nerves ascend and closely unite with the great transverse plexus on the body of the uterus.

This plexus on the left side arises near the mesial line on the back part of the uterus, midway between the fundus and cervix, from a mass of fibres which adhere so firmly both to the peritoneum and muscular coat, that it is difficult precisely to determine their arrangement. From these fibres, the plexus proceeds across the uterus in the form of a thin web to the point where the spermatic vein is leaving the uterus. After closely uniting with the nerves accompanying the uterine vessels, this plexus proceeds outwards to the round ligament, becoming less firmly adherent to the peritoneum, where it unites with a plexus on the anterior surface of the uterus and spreads out into a great web under the peritoneum. This plexus is loosely attached through its whole course to the subjacent muscular coat, by soft cellular membrane.

From the second, third, and fourth sacral nerves, but chiefly from the third, branches pass into the posterior border of the ganglion at the cervix, and are lost in its mass. From the inner surface of the ganglion, numerous small white soft nerves are given off to the neck of the uterus, some of which ramify under the peritoneum and others pass deep into the muscular coat. From the anterior and inferior borders of the ganglion, many large nerves are given off to the bladder and vagina, and from its posterior margin to the rectum.

On the left side, the spermatic nerves form a plexus around the spermatic artery from about two inches from its origin. A small branch is then sent off from the spermatic artery to the ureter accompanied with some filaments of nerves. The spermatic artery then passes down between the spermatic veins, and some of the nerves leaving the artery, get on the outside of the veins and numerous filaments are observed ramifying on the coats of the veins, and also upon the absorbents, and forming loops around them. Branches of nerves are then sent to the fallopian tube, and to the ovarium, at the base of which a great plexus is formed. The spermatic nerves then appear to enlarge as they proceed towards the uterus along with the artery and veins, and in their course filaments are sent to the peritoneum, and with the veins of the ureter. Some filaments pass down along with the spermatic artery to anastomose with the nerves accompanying the uterine arteries and veins, and other branches pass to the round ligament and to the great plexus on the body of the uterus.

On the right side of the uterus the distribution of the hypogastric, spermatic, and sacral nerves does not differ essentially from that now described as seen on the left side. The form and situation of the great plexuses on the body of the uterus are, however, more distinct, and it presents the appearance of a white pearly fasciculated membrane, about a quarter of an inch in breadth, proceeding from the mesial line at right angles to the nerves accompanying the blood-vessels, across the body of the uterus, to the round ligament where it unites with a plexus on the anterior surface of the uterus. Numerous branches are sent off from the upper and lower borders of the posterior plexus to the muscular coat of the uterus. An extensive and intimate union at various points is distinctly perceptible between the branches sent off from this plexus and the branches of the nerves accompanying the uterine arteries and veins, and those which proceed from the hypogastric plexus and cervical ganglion to spread out and form a great nervous web under the peritoneum on the posterior surface of the uterus.

On the anterior and upper part of the neck of the uterus, there is a great mass of reddish coloured fibres, firmly interlaced together, resembling a thin broad ganglion of nerves, into which numerous large branches of the hypogastric nerves on both sides enter, and to which they firmly adhere. From the upper part of this fibrous substance, there passes up under the peritoneum over the whole anterior surface of the uterus a great plexus, the branches of which pass into the muscular coat, or unite with those nerves proceeding with the blood-vessels to the upper part of the uterus. Prolongations of this plexus also extend to the round ligaments, and some of its filaments unite with those of the spermatic nerves.

From the form, colour, and general appearance of these plexuses on the body of the uterus, and the resemblance they bear to ganglionic plexuses of nerves, and from their branches actually anastomosing and coalescing with the hypogastric and spermatic nerves, I was induced to conclude, on first discovering them, that they were nervous plexuses and constituted the special nervous system of the uterus."

3. *Nerves of the Gravid Uterus in the Ninth Month.*

Dr. Lee describes two dissections of the Gravid Uterus at this period. We shall quote the second.

"On the 12th of September, 1840, I enjoyed another opportunity of examining the nerves of the uterus at the end of the ninth month. The fœtus and its appendages had been expelled a short time before the death of the patient from whom the uterus was obtained. The spermatic nerve on both sides passed off from the renal plexus, and after accompanying the spermatic arteries for about two inches, several considerable branches left these vessels and passed to the veins which they surrounded and followed to the uterus. The absorbents on the right side were seen covered with filaments of nerves. The aortic plexus and the hypogastric nerves and plexuses presented the same appearance as in the last dissection, and were larger than in the uterus of six months. Branches were seen proceeding from the anterior part of each hypogastric plexus to the corresponding ureter, the uterine artery and vein, and to the neck and body of the uterus, as above described. The trunk of each hypogastric nerve was prolonged through the middle of the plexus to the ganglion at the cervix, into which the second, third, and fourth sacral nerves sent branches. Between the posterior part of each hypogastric plexus and the sacral nerves, there were communicating branches which did not enter the ganglion. The ganglion on each side was situated close to the neck of the uterus, a little behind the ureter near its termination in the bladder. The ganglia at the cervix appeared to be more expanded than in the former dissections, and a great communication was formed between the numerous small soft nerves passing from their inner surface and the great plexuses on the body of the uterus. From each ganglion branches spread out under the peritoneum, both of the anterior and posterior surfaces of the uterus, and many were seen plunging into the muscular coat at the cervix, and others passing up with the blood-vessels to the fundus uteri. The ureters were also observed to be surrounded with nerves from the ganglia, and many branches passed from them to the sides of the bladder, vagina and rectum. The upper borders of the great plexuses on the body of the uterus behind, were traced to a considerable depth passing in the cellular membrane between the layers of the muscular coat of the fundus uteri, which I did not perceive in the last dissection. Several trunks of absorbents on the sides of the body of the uterus were supplied with nervous filaments. The most striking circumstance observed in this dissection, was the direct continuity at numerous points between the branches proceeding from the hypogastric plexuses and ganglia at the cervix, and the branches of the great transverse plexuses on the body of the uterus behind. In the previous examination of the uterus, I had never observed fila-

ments of nerves ramifying upon the coats of the absorbents. I have since seen this in the gravid uterus of the cow, and in the human spermatic cord, at a short distance from the testicle. Analogy led me to suspect, that many branches of nerves would also be found on examination to accompany the veins of the spermatic cord and to ramify upon their coats. Mr. James Dunn, at St. George's Hospital, undertook, at my request, to ascertain if this were the fact, and in July last he made three preparations in which the nerves are seen covering the veins as they pass out of the testicle. It appears from these, that a much greater number of nerves accompany the veins than the artery in the spermatic cord. The nerves in these preparations form a great plexus around the veins, and are traced into the testicle."

4. *Nerves of the Gravid Uterus in the Fourth Month.*

"In October, 1840, I finished the dissection of a gravid uterus of four months, all the arteries and veins on the right side of which are completely filled with red and blue injection, and the whole nervous system of the uterus more perfectly displayed than in any of the preparations already described. The uterus was removed from the body of a woman, who died in St. George's Hospital, from an external injury, and the fœtus and its appendages were expelled a few hours before death. The nerves were traced while the uterus was covered with rectified spirit. An artery of considerable size filled with injection, is seen accompanying the right hypogastric nerve, and passing along with its branches through the hypogastric plexus to the ganglion at the cervix. In this course, the artery is seen ramifying upon the trunk of the hypogastric nerve, and the most minute branches of the hypogastric plexus. The sacral nerves passing into the ganglion, are also accompanied with an artery, which is likewise injected, and which passes through the centre of the ganglion. These nerves are a little smaller than in the uteri of nine months. The ganglion is thick, large and distinct, of an oblong form, about three quarters of an inch in diameter, and consisting of grey and white matter. From its inferior border, three large bundles or masses of nervous fibres are sent off, which present an appearance resembling the *pes anserinus* of the portio dura. The posterior of these subdivides into numerous small branches, accompanied with arteries, which supply the rectum and back part of the vagina. The middle of these great nerves proceeding from the ganglion, likewise accompanied with arteries, ramifies upon the side of the vagina; and the anterior upon the bladder around the entrance of the ureter.

From the hypogastric plexus, before it enters the ganglion, and from the inner surface of the ganglion, numerous large and small branches of nerves are given off to the neck of the uterus, some of which accompany the blood-vessels toward the fundus, and others spread out under the peritoneum. All these are likewise accompanied by injected arteries. From the inner border of the ganglion, a broad nervous band is sent off, which passes on the outside of the ureter, and another on the inside, which unite and completely surround the ureter. From these united nervous bands, many large branches are sent to the back part of the bladder and into the anterior part of the cervix uteri. The course of these branches can easily be traced by their injected arteries. On the lower and anterior part of the cervix uteri, over the mesial line, there is a thick membranous expansion, into which these nerves enter from both hypogastric plexuses and ganglia. From the sides and upper part of this membrane, there are given off innumerable filaments, apparently nervous, which unite on the sides of the uterus with the nerves accompanying the blood-vessels, and with the spermatic nerves, and some of which pass out with the round ligaments. These are likewise accompanied with minute arteries, as all the nerves are on the right side of the uterus, entering the ganglion, and passing out from it.

The nerves and ganglion on the left side, correspond in appearance with

those of the right, and the greater number of the spermatic nerves on both sides accompany the spermatic veins.

I had never before seen the arteries of the nerves of the uterus injected, or suspected that they had concomitant arteries which enlarged along with them during pregnancy."

5. *Nerves of the Uterus ten days after delivery.*

"On the 27th of June, 1840, I examined the uterus of a woman who died suddenly on the tenth day after delivery. The hypogastric plexuses, and those both on the anterior and posterior surfaces of the body of the uterus, were very much reduced in size from what they were observed to be in the uteri of six and nine months. This observation made it certain, that the nerves of the uterus after having performed their proper function during gestation and in labour, gradually return to the condition in which they are found in the unimpregnated uterus."

Two dissections are narrated. We introduce the second.

Mr. James Dunn has nearly completed a dissection of the nerves of a uterus, which was recently obtained by me at St. George's Hospital, from the body of a young woman, who had never been pregnant. The aorta, vena cava, and all the arteries and veins, connected with the uterus, have been injected. The uterus is of the ordinary size. The spermatic nerves on both sides are given off mainly by the renal plexus. The greater number of these nerves are distributed upon the veins, and not upon the spermatic arteries. Branches are sent to the fallopian tubes and ovaria, and others pass down to the uterus, and can be distinctly traced into the great transverse plexuses, under the peritoneum behind.

The aortic plexus, hypogastric nerves and plexuses are considerably larger than in the last dissection. The arteries of these nerves and plexuses have been successfully injected, and it is evident that they are much smaller, than the arteries in the gravid uterus at the fourth month. The ganglia are large and distinct, and the branches sent off to the bladder, vagina and rectum, are all accompanied by arteries filled with injection. Numerous branches of nerves are seen accompanying the uterine blood-vessels to the fundus, and the plexuses on the body of the uterus, before and behind, are continuous with the branches proceeding from the hypogastric plexuses, and the ganglia at the cervix.

These dissections prove that the human unimpregnated uterus possesses a great system of nerves, which enlarges with the coats, blood-vessels, and absorbents during pregnancy, and which returns after parturition to its original condition before conception took place. It is chiefly by the influence of these nerves, that the uterus performs the varied functions of menstruation, conception and parturition, and it is solely by their means, that the whole fabric of the nervous system sympathises with the different morbid affections of the uterus. If these nerves of the uterus could not be demonstrated to exist, its physiology and pathology would be completely inexplicable.

6. *Nerves of the Uterus in the Mare.*

There are two dense oblong ganglia in the mare, situated on the sides of the aorta a few lines above its bifurcation. The two cords of the great sympathetic nerve terminate in the superior extremities of these aortic ganglia, which are connected together by two branches of nerves, which pass across the front of the aorta from their inner borders. Each ganglion sends off a branch from its outer border, to join the spermatic nerves. From the inferior ends of these ganglia are given off the hypogastric nerves, and the nerves which supply the cornua of the uterus.

The *left hypogastric nerve* proceeds downward from the left aortic ganglion between the folds of the broad ligament, by the side of the uterus to the cervix,

where it terminates in the hypogastric plexus. This nerve is at first much larger than the nerve of the cornu, and appears to be a continuation of the ganglion, and in its course it has two distinct ganglionic enlargements. The first of these is three inches from the aortic ganglion, and the second more than two inches lower down, and from both of these several large and small branches are sent off to unite with the nerve of the left cornu, and with the plexus of nerves accompanying the trunk of the uterine artery.

The *nerve of the left cornu*, soon after being given off by the aortic ganglion, divides into two branches, which again unite at a distance of three inches from the ganglion and form one nerve. This nerve suddenly expands into a firm round elongated ganglion, which resembles the bulbous root of a plant. On leaving this ganglion the nerve is enlarged to more than double the size it is on entering the ganglion, and it proceeds without any considerable diminution for four inches, to the uterine artery, with the branches of which it ramifies upon the upper part of the body of the uterus, and the whole cornu. Numerous small filaments are given off from the nerve in its course with the artery to the peritoneum and muscular coat, and it forms a great plexus of nerves, which not only surrounds the branches of the artery, but the veins and absorbents. On the nerve of the right cornu of the uterus, a round elongated ganglion is also formed, about the same distance from its origin, and the nerve passes out of the ganglion much increased in size, and is distributed to the body of the uterus and cornu, as on the left side.

From each hypogastric plexus there are sent off to the body and neck of the uterus many large nerves, which have a very peculiar serpentine or undulated appearance. They proceed between the folds of the broad ligaments to the anterior and posterior surfaces of the uterus, and after sending numerous branches to the peritoneum, they penetrate the muscular coat, and can easily be traced ramifying upon it on to the cornua. The greater number of these nerves are found on the anterior surface of the uterus, where they form an immense plexus in the muscular coat, and where they can be seen as they cross the arteries, anastomosing with the branches of the nerves of the cornua. At the cervix, these nerves can easily be traced through the muscular coat to the lining membrane of the uterus, under which they form a beautiful nervous web. These great nerves in the uterus of the mare, resemble in their origin and distribution, the ganglionic plexuses in the human uterus above described, which I regard as the muscular nerves of the organ. The aortic ganglia in the mare correspond with the aortic plexus in the human subject, and the nerves of the cornua with the branches of the hypogastric plexuses which pass down between the uterus and ureters, to the trunks of the uterine artery and vein, with the branches of which they ramify on the body and fundus of the uterus.

Dr. Lee has examined with the microscope the plexuses on the body of the human uterus, and the spermatic and hypogastric nerves, and has been unable to discover any appreciable difference between them.

Two plates accompany and illustrate the description. The first represents the nerves of the uterus in the sixth month of pregnancy—the second, those nerves in the ninth month. Both are views of the posterior surface of the uterus.

We have witnessed the preparations, which are faithfully delineated. Without offering a confident opinion on the nature of what Dr. Lee considers nerves, we can, at all events, do justice, and we ought to do it, to the patient manner in which the investigation has been conducted, and the fidelity with which what has been found has been described. Dr. Lee is still pursuing the inquiry, and we may look forward to its ultimate complete solution at his hands. It redounds infinitely to his honour.

Spirit of the Foreign Periodicals.

ON THE ALTERATIONS OF THE BLOOD IN DIFFERENT DISEASES.

IN the last number of the *Medico-Chirurgical Review*, page 196, will be found a lengthened abstract of the important Memoir of MM. *Andral* and *Gannaret*, on the changes of the blood—more especially as regard the relative quantities of its fibrine, globules, and serum—in different classes of disease. We then pointed out the importance of such enquiries, mentioned some of the useful inferences that may be deduced from the results already obtained, and suggested that, in all probability, the most valuable discoveries in practical medicine will be made by following out a rational system of Humoral Pathology.

We are glad to find that some of the ablest men in France are beginning to entertain similar views to those which we have uniformly advocated in the pages of this Journal, and are giving their powerful aid in disseminating more just views respecting the necessity of attending to the conditions of the fluids in various classes of diseases. The names and high authority of *Andral* and of *Rayer* cannot fail to carry great weight with medical men of every country, and more especially with their own compatriots.*

In a recent number of the French Journal *Esculape*, we find a memoir by a M. *Monneret*, entitled "Remarks on the Alterations of the Blood," of which we propose to give an analysis. He commences with an allusion to the decay of the Broussaian doctrine.

"For some time past there has been a decided re-action against the doctrine of *Broussais*, and the humoral medicine of the ancient physicians is no longer treated with that contempt and air of superiority which have characterised many modern pathologists.

We have discovered, though rather late, that we have been following in an erroneous path, by adopting with too much confidence the medical legislation of the Val-de-Grace; and at length many have been and are retracing their steps. We are not, however, about to return to all the vagaries of the old school, but will only assent to established truths, which actual observation may verify at any time.

Such is the direction which medical enquiries are taking at the present time.

Instead of limiting our attention to the lesions of the solids exclusively, without tracing them up to the physiological cause on which they depend, medical men are now engaged in studying the alterations of the blood and the other fluids of the body, and following out a method of enquiry which cannot fail of leading to very important results.

The recent memoir of MM. *Andral* and *Gannaret* has shewn what may be done, and has already contributed to throw considerable light on the pathology of many diseases."

M. *Monneret* very justly remarks that, until within the last few years, medical men have occupied themselves too much with the minute chemical analysis of the blood, and have too often overlooked, in consequence, the more obvious and more important changes in the relative proportions of its principal constituents. However useful the elaborate researches of *Lecanu* and other distin-

* We may refer our readers to some remarks on the humoral pathology, so to speak, of rheumatic and gouty affections, in the last number of this Review: vide art. *Bovilland* on Articular Rheumatism.—(*Rev.*)

guished chemists may be, we must remember that, for practical purposes at least, the examination of all the fluids of a living body should be conducted in a physiological rather than in a merely chemical manner.

Before alluding to the changes which the blood exhibits in different diseases, let us dwell for a moment on the normal constitution of this vital fluid.

When blood is allowed to rest, it separates into two parts, the clot and the serum—the former consisting of the red globules and the fibrine, and the latter of water, which holds in solution albumen and various saline matters.

The fibrine of the coagulum forms a meshwork, in the interstices of which are entangled or enclosed the numerous globules to which the blood owes its colour, and also a quantity of serosity similar to that in which it, the coagulum, floats. The principal salts which along with albumen are dissolved in the serum, or watery portion of the blood, are the muriates of potassa and soda, the sulphate of potassa, the carbonate of soda, and the phosphates of soda and lime. The globules seem to consist of albumen united to a colouring matter, to which the name of *hæmotosine* has been given.

The relative proportion of these different constituents in healthy blood may be stated thus :—

1. Fibrine	3 parts	} The Clot.
2. Hæmotosine	2 „	
3. Solid albumen of the globules	125 „	
4. Liquid and dissolved albumen	68 „	} The Serum.
5. Saline matters	12 „	
6. Water	790 „	
<hr/>		
1,000 parts.		

The relative proportions of these constituents of the blood are found to vary much in different classes of diseases; and these variations are so uniform and constant, that we are completely warranted in asserting that there is a strict relation between them and the nature of the morbid process that is going on in the system. For example, that a most characteristic feature of all the genuine phlegmasiæ is a superabundance of the fibrine of the coagulum, has been long known, and is most clearly proved by the researches of MM. *Andral* and *Gannarel*.

It appears also, from these researches, that in the genuine fevers, such as typhus, the various exanthemata, and certain vague or ill-marked pyrexia, the quantity of the fibrine is not increased, but is either stationary or somewhat below the normal standard. Again, chlorosis is an example where the proportion of the red globules is sensibly diminished; and in the *morbus Brightii* the chief morbid change seems to consist in a diminution of the quantity of the albumen held in solution by the serum.

These facts have indeed been long known to most practical men, who have not allowed their minds to be fettered by the exclusive doctrines of the solidists; yet still much credit is due to MM. *Andral* and *Gannarel* for the statistical illustrations which they have adduced in support of them. One, however, of the most unexpected of all the results of their labours has been to shew that in *phthisis*, at least in certain stages of it, there is almost always an excess in the proportion of the fibrine of the blood. M. *Monneret* says on this subject :—

“When the tubercles are still crude, the increase of the fibrine is scarcely appreciable; when they begin to soften, it is more marked; and at length, when vomicae are formed, the proportion of this element sometimes rises to six parts in the thousand.

The red globules, on the other hand, follow the very opposite direction; their period of decrease is progressive from the commencement to the close of the

disease: the difference often exceeds twenty parts. The disease is therefore represented in its complexion by the increase of the fibrine on the one hand, and by the diminution of the albuminous globules on the other. To the one of these alterations corresponds the complication, and to the other the pathological condition of phthisis."

Such is a very important discovery of modern humoral pathology—provided it be confirmed by the researches of others. However this may be in reference to the state of the blood in phthisis, the statements of MM. *Andral* and *Gannaret* are, we believe, entitled to implicit confidence on the important question of the pathology of fevers.

We cannot have a more convincing proof of the error of *Broussais* and his disciples, in regarding typhus and other fevers as of the nature of the genuine phlegmasiæ, than what is afforded by the researches of our authors. For while in the latter classes of diseases, the proportion of the fibrine of the blood is invariably increased, in the former it is never so, and in not a few cases is even sensibly diminished; whereas the proportion of the red globules is at the same time either unaffected, or somewhat higher than it is in health.

The following is a summary of the results obtained by MM. *Andral* and *Gannaret's* examination of the blood in different forms of fevers.

In *simple continued fevers*, no increase in the quantity of the fibrine is observed either during the precursory stage, or when the disease is fairly formed: in several cases it is sensibly diminished. On the contrary, the proportion of the red globules is almost always increased; this increase being sometimes very considerable.

In *typhoid fevers* also, although there is a decided inflammatory complication of the gastric and intestinal mucous membrane and glands, we never observe any increase in the proportion of the fibrine at any stage of their existence—a demonstrative proof, if others were wanting, that these fevers cannot be justly regarded as phlegmasiæ, and therefore that the terms *gastro-enterite*, *mesentero-enterite*, &c. are most fallacious and improper.

(We wonder how our friend M. *Bouillaud* will reconcile these facts with his practice of bleeding *coup sur coup*: doubtless, he is too adroit a debater not to be ready with an answer; for never did the poet's line

— e'en though vanquished, he could argue still,

apply to any one more truly than to the physician of La Charité.—*Rev.*)

In *eruptive fevers*, the genuine exanthemata, the proportion of the fibrine in the blood is almost invariably below the normal standard. That of the red globules is occasionally, as in many cases of scarlatina and rubeola, considerably increased. It appears therefore that the existence of a cutaneous phlegmasia is not in itself sufficient to induce an inflammatory condition of the blood, or that its influence is counteracted and neutralised, so to speak, by a specific principle on which the exanthemata depend.

In *intermittent fevers*, the blood does not seem to undergo any appreciable alteration. Does not this prove that this class of diseases results from a general disturbance (ebranlement) of the organism, and that the nervous system acts an important part in their production?

Another important result of MM. *Andral* and *Gannaret's* researches is, that, in cerebral congestions and hæmorrhages, *the condition of the blood is very nearly the same as it is in simple fevers.*

In not one of fifteen cases of apoplexy, examined by these gentlemen, was the proportion of the fibrine at all increased, and in some of them it was diminished; whereas that of the red globules was found to be above the normal standard in every instance without exception. "This double alteration, which is especially remarkable at the commencement of the disease, is characteristic. It proves that the less fibrine there is in the blood, the less

coherent it becomes, and therefore that cerebral hæmorrhage is dependent rather upon an essential modification in the elements of the circulating fluid, than upon any lesion of the solids.

Still there is nothing absolute in this conclusion; for in numerous cases it happens that certain pathological conditions of the solid parts induce apoplexy, and then the blood does not exhibit the abnormal conditions which we have mentioned."

So much for the humoral characters of inflammatory, febrile, and some congestive and hæmorrhagic diseases. We come now to a very opposite class of maladies—those in which there is a striking diminution in the proportion of the red globules contained in the blood. In chlorosis, especially, and indeed in almost all cachectic states of the system, by whatever cause induced, this is remarkably the case.

In a case of diabetes the proportion was found to have fallen from 127, the standard of health, to 86; in a case of dropsy, connected with disease of the heart, to 68; and in various cases of chlorosis to 77, 70, 60, 50, 46, and in one instance to 38. In no other disease has the relative quantity of the red globules been found so low as in chlorosis. The gradual increase in this quantity during the administration of ferruginous preparations was repeatedly ascertained. How is this effect of steel to be explained? We must confess that we are unable to say: unless, indeed, by attributing it to the improvement of the general system, which is then enabled to bring back the process of sanguification to a healthy state.

With respect to the last division of diseases according to the humoral nomenclology—those in which the characteristic feature is an alteration in the proportion of the albumen dissolved in the serum—we have no new facts to mention. It is chiefly in *Bright's* disease of the kidneys that this change is most remarkable; for it would seem that the larger the quantity of albumen that exists in the urine, the less will be found in the serum of the blood. As yet, no experiments have been made as to the state of the serum in other diseases, in which this morbid condition of the urine is known to exist.—*L'Esculape*.

M. BEAU ON AUSCULTATION.

In our last number we gave an abstract of M. *Beau's* first memoir, and directed our readers' special attention to the novel and very ingenious views which he has propounded. It will be remembered that his leading position is, that the respiratory murmur of health, as well as the various modifications which it presents in a state of disease, are owing to the retrograde resonance of what he calls the *glottic sound* in the bronchi and cells of the lungs, and not (as *Laennec* and all other auscultators have supposed) to the friction of the air on the parietes of these tubes and cells. According to this view, the glottis, and not the lung, is the proper seat of the vesicular murmur.

He draws what he considers a powerful argument in favour of his opinions, from the admitted fact that, in certain cases, this vesicular murmur is entirely inaudible, although the respiration continues to be regularly performed.

..... "This difficulty had occurred to the mind of *Laennec* himself, in reference to the *glottic* crowing or whistling sound of hooping-cough. The following passage from his great work may be here quoted:—"The whistling and prolonged inspiration, which constitutes the pathognomic character of this disease, appears to take place altogether in the larynx and trachea. We cannot hear either the sound of the pulmonary respiration, nor the bronchial respiratory sound, even in those parts of the lungs which, a few moments before, and after the hoop or kink, gave out a distinct puerile murmur. This phenomenon

can only be explained in one of two ways:—*either* by supposing that there is a momentary sanguineous or serous congestion and consequent swelling of the mucous membrane of the bronchi, sufficient to obstruct these canals; *or*, that there is a spasmodic contraction of the bronchi, which would produce the same effect." P. 188, ed. 1826.

Now *Laennec* would never have hazarded such a conjecture, had he observed this *phenomenon* (as he calls it) in a case of organic, and not merely in one of spasmodic, contraction of the larynx. What, however, had escaped his notice, has been distinctly alluded to by Dr. *Stokes* of Dublin, and by M. *Barth*. The former of these gentlemen says, in his *Treatise on the Diseases of the Chest*;—"In the diseases of the larynx, the vesicular murmur becomes feeble in proportion to the degree of the obstruction. It is observed in some cases to be weak, or entirely absent, over the whole chest."

The latter, (*vide Archives de Medecine*, p. 227, 1838,) thus expresses himself:—"The vesicular respiratory murmur may be diminished, or altogether abolished, on both sides of the chest by any lesion which is capable of contracting the calibre of the upper part of the air passages."

Neither of these propositions is strictly correct. For, in truth, we frequently meet with cases of contraction of the laryngo-tracheal tube, in which the respiratory murmur is not only audible, but even louder than in health: and the reason of this is, that the passage of the air being somewhat impeded at the obstructed point gives rise to an exaggerated blowing sound. It is only when the disproportion between the volume of air and the laryngo-tracheal obstruction is more considerable, that this sound loses its normal blowing character, and acquires a snoring or whistling tone. Under such circumstances the pulmonary resonance undergoes the same change; and hence the usual respiratory murmur is no longer audible.

This exaggeration on the one hand, and absence on the other, of the respiratory murmur in the lungs are sometimes observed, alternating with each other, in the same person. In a case of syphilitic swelling of the larynx, under the care of Professor *Fouquier*, the laryngeal sound was observed to vary according to the rapidity of inspiration; for it had a blowing character, when the air passed slowly through the contracted point, but immediately acquired a metallic-like snoring character, when the breathing was quickened. On ausculting the chest, these two different sounds could be distinctly observed to alternate with each other.

The same thing was noticed in the case of a man, who, having undergone the operation of tracheotomy for a contraction of the larynx, was obliged to breathe through a canula. In him there was heard a vesicular murmur, only in an exaggerated degree, because the orifice of the canula being rather small gave rise to a strong blowing sound; but when the canula was obstructed, and he was obliged to breathe by the mouth, a loud snoring sound was produced at the contracted point, and this snoring sound was reverberated backwards through the entire chest, overpowering and taking the place of the normal vesicular murmur.

These alternations of absence and of exaggeration of the normal respiratory murmur are frequently observed in hysterical patients affected with spasm of the glottis.

According as the glottis happens to be more or less contracted, there is a whistling or only an exaggerated blowing sound audible; and it will then be found that the lungs give out on auscultation at one time a whistling or sibilant sound which completely hides the ordinary vesicular murmur, and at another time an exaggerated blowing sound, to which the epithet *puerile* has been given by most writers.

To explain these phenomena according to the theory of *Laennec*, we must suppose that in the cases of considerable contraction of the larynx, where the

favourably, when there appeared a small tumor rising up in the centre of the wound, as if proceeding from the abdomen; it increased rapidly, and when it had gained the size of an egg, M. Roux again ordered the patient into the operating theatre, and again removed a tumor: a third was not long in showing itself, and M. Roux, at last deeming all attempts to remove an immovable disease useless, sent the man into the country to die.

Surely this is unworthy of the knowledge and humanity of the day. It is just what occurred in this country many years ago, before the nature and properties of the malignant morbid growths had been properly investigated or could be understood. We need not add, that such practice would not be tolerated in an English hospital now. What surgeon in this country would amputate under these circumstances?

A man presented that well-known aspect which is an infallible indicator of the progress of cancer; the thigh was enormously swelled, and covered with blue veins; a small part of the highest part of the thigh appeared unaffected by the disease, and here M. Roux amputated the limb: the operation was most difficult and prolonged; a very great quantity of venous blood was lost; the man fainted again and again after the operation, and then rallied, but he never recovered from the shock; his face was sunken and pallid and mournful, his pulse quivering, and agitation extreme, and he died on the third day after the operation. The fungoid disease proceeded from the centre of the bone, of which it had completely altered the texture; the muscles, also, all round the thigh could not be distinguished from the diseased mass.

3. *Loss of Sensibility from Injury of the Infra-Orbital Nerve.*

The man who was the subject of this injury, had fallen, and in falling had struck the lower part of the orbital ring violently against some projecting object; this blow broke in, and caused a depression of the bone above the infra-orbital canal, and thence pressure on the infra-orbital nerve, and the consequence was complete loss of sensation in all the parts which it supplies with filaments.

4. *Extirpation of the Fifth Metacarpal Bone. Inflammation of the Carpal Joints. Advantages of Extirpation of the First Metatarsal Bone.*

M. Blandin performed this operation on the hand of a young man: the bone was affected by caries, was much enlarged, and had produced several fistulous openings in its vicinity; in this operation, which M. Blandin performed by a simple incision carried along the inner side of the hand, the synovial membrane, which is continuous through the bones of the carpus, must be opened, and the consequence in this case was violent inflammation of the whole of the hand, suppuration took place beneath the fascia, and numerous openings were made in the hand to give exit to the pus—after a time the inflammation subsided, but the lower part of the wound, whence the bone was taken, did not heal. Three months after the operation, this fistulous opening still existed, and gave exit to a glairy discharge; the little finger was quite motionless, and the patient did not seem to have the slightest power over it, so that probably some of the other bones were affected in this scrofulous subject; what motion the finger might have regained, if the operation had been successful, it is difficult to say, but from analogous ablations of bone, as of the jaw, &c. it is well known that deposits of a cartilaginous nature supply well the deficiency of the bone which is lost—the inflammation consequent on this operation is well worthy of remark, and in respect to this character it may be compared to the following operation of extirpation of the first metatarsal bone of the foot where a different arrangement holds as to the synovial membrane. This operation M. Blandin performed for caries and enlargement of the bone; the consequent inflammation here was much less than in the last case, and the reason may no doubt be because only one joint is opened. This operation is neither difficult nor dangerous, and is

undoubtedly much preferable to taking away the whole of the great toe, for when this is done, it happens, that the foot may turn over, from want of its natural support in the ball of the great toe. M. B. observed that it was much better to take away the whole of the bone, than only a part, for in the latter instance, a troublesome caries often ensues, and, as had happened to himself, may require a second operation. As the articulation of the first metatarsal bone, with the internal cuneiform bone, is situated at exactly the middle point, between the heel and the extremity of the great toe; an incision is made from this point along the inner border of the foot, to the first phalanx of the great toe, and a transverse incision is made at the tarsal extremity of this incision. The tarsal, or *greater* extremity of the bone is first dissected out, and then the operation is easily completed. The anastomotic artery passing between the two first metatarsal bones, is almost always opened, and was in this instance. M. B. took one branch up on the dorsum of the foot. The result of this operation I cannot give, as when I left Paris, four months after the operation, the subject of it was still in bed with a fistulous opening in the wound."

5. *Wound of the Fore-arm—Diffuse Inflammation of the Deep Cellular Membrane—Propriety of lengthened Searching for Arteries?*

A healthy man, young and vigorous, was brought into the Hôtel Dieu, with a lacerated wound of the lower and front part of the fore-arm. He had, while in a state of inebriety, struck his arm down upon a glass, and broken it in pieces—several of the fragments were sticking in the soft parts. The depth of the wound, which was contused and lacerated, was not clear; from its situation the ulnar nerve was probably divided; and from the great loss of arterial blood, which had taken place, probably the ulnar artery also; compression, above and below the wound, in the course of the ulnar artery, M. Blandin thought very unadvisable; and, although the bleeding had ceased, he sought for the extremities of the divided artery, and tied them—an operation which required much dissection and labour, from the laceration of the surrounding tissues; the wound was then dressed with straps and bandage. The next day there had been no bleeding, and the wound appeared well. On the third day one of the ligatures came away; but there was swelling above the wound, and pain, so the plaister straps were removed. On the fourth day the swelling was increased, and there was every appearance of violent inflammation beneath the aponeurosis of the fore-arm; it was swelled in all directions, presented an unusual roundness, and that most remarkably in front; the skin was tense and *colourless*, pressure gave a sensation of deep tension, and obscure fluctuation, œdema of the cellular tissue, distention of the superficial veins (from the pressure on the deep veins of the fore-arm)—a kind of insensibility in the limb. One hundred leeches were ordered to be applied to the fore-arm, and a low diet enjoined. On the fifth day there was the same swelling, more insensibility, heat hardly natural, much fever, and the leeches had not at all relieved the symptoms, and there was every reason to believe that gangrene had already commenced; three long incisions were made through the aponeurosis, in the length of the fore-arm. On the sixth day the skin had a blackish tint, and gangrene had evidently seized the fore-arm and hand; to prevent its extension three incisions were made in the arm, and camphorated applications were ordered to be applied. The low fever was much increased, the pulse weak and quick, and delirium had occurred during the night, the belly tympanitic, and general prostration very great. Cold applications were ordered to the head, and slightly stimulating medicines to be taken. During the course of this day all the symptoms increased, and the patient died.

We make no question whatever that this was essentially a case of diffuse inflammation and suppuration in the intermuscular cellular membrane. We doubt if any thing, save, possibly, early amputation, could have saved the man. But

vesicular murmur is replaced by an abnormal sound, the air does not penetrate into the cells of the lungs; and on the contrary that in cases of less considerable contraction, when the blowing sound is merely exaggerated, or, in other words, has become puerile, the air penetrates in a superabundant quantity:—an explanation which cannot surely be maintained by any unprejudiced reasoner.

M. Beau, after some further remarks on this part of his subject, proceeds to examine the subject of the various *rales* which have been described by auscultators. These sounds, he impresses on his readers, are very different from the abnormal modifications of the respiratory murmur, and of the voice, to which we have hitherto alluded; for they are solely and altogether the results of morbid changes in the bronchial tubes and pulmonary cells themselves, and not of the retrograde resonance of any glottic sounds. He divides them into two classes—the *vibratory*, or *dry*; viz. those which consist in a more or less prolonged vibration of the air in consequence of an obstruction in some point of the air passages, and the *bullar*, or *moist*, viz. those arising from the rupture of bullæ, of larger or smaller dimensions in different cases, produced by the air traversing a fluid obstacle in these tubes.

The Vibratory Rales.—The most remarkable of these are well known as the sibilant, the sonorous or grave, and the snoring *rales* of *Laennec* and other authors.

..... “The existence of these different kinds of vibratory rale is in general very transitory. A single expectoration or act of coughing is often sufficient either to cause them to cease altogether, or to change them into a form different from that which was present at first: thus the sibilant *rale* becomes sonorous, snoring, or blowing; or perhaps one of these last *rales* acquires the sibilant character, soon to be again transformed.”..... “The various vibratory rales may be of the same duration as the corresponding respiratory movements, or they may be shorter than these. The same rale may be heard both during inspiration and during expiration; or it may be present during one act and absent during the other. In the latter case, it is during the expiratory movement that the rale is most frequently heard—hence the number or variety of the expiratory is greater than that of the inspiratory rales.

To explain these last facts, we are obliged to admit that the obstacle in the bronchi, which sets the air in vibration, does not necessarily exist during both acts of respiration; and, as we have just stated, that the expiratory rales are in general more frequent than the inspiratory, it follows that the air meets with more impediments in its escape from, than in its entrance into, the bronchi.

The vibratory *rales* may have their seat in every point of the bronchial tree; but the different forms of these *rales* usually affect tubes of a different diameter. Thus the *sibilant rale*, conveying the sensation of an attenuated stream of air, is most frequently heard in the small bronchi; the grave or *sonorous rale* in bronchi of a middling size; and the *snoring* or loud blowing rale in the larger bronchi.”

..... M. Beau attributes the origin of the vibratory *rales* in almost all cases to an obstruction of some of the bronchial tubes from the presence of viscid mucus, and very rarely to any actual swelling of their lining membrane. His chief reason for this opinion is, that “these rales seldom continue for any length of time the same, but are continually changing from one tone to another, from the sibilant to the sonorous or the snoring, and back again from the latter to the former. Now we get rid of this difficulty, if we suppose that the operating cause is the presence of viscid mucus in the air-passages; for, as this mucus may be displaced by any effort of the breathing, the character of the existing *rale* will depend chiefly upon the size of the tube, or tubes, which may

be partially obstructed. In what other manner can we explain the occurrence of *rales*, which are audible during one only of the acts of breathing, and not during the other? The intermittent obstacle, which gives rise to them, cannot well be supposed to be a swelling of the lining membrane of the bronchi; on the contrary, how easily explicable is the phenomenon on the supposition that some of these air-tubes are partially obstructed by a portion of mucus, which having the form of a *languette*, and its edge being raised sometimes towards the larynx, and at other times towards the pulmonary cells, may be most aptly compared to a half-opened valve, which throws the air into vibrations either during inspiration or during expiration."

M. Beau accounts for the greater frequency of the expiratory than of the inspiratory *rales* on the ground that the air must encounter a greater degree of obstruction in its exit from, than in its entrance into, the small bronchi and the pulmonary cells, from the circumstance of the whole tissue of the lungs being more or less contracted during the act of expiration by the descent of the ribs and the rising of the diaphragm.

In consequence of this compression, which necessarily affects both the blood-vessels and the air-tubes of the lungs, the interval between the loose edge of the mucous obstacle and the corresponding wall of the tube must be more or less diminished, and the intensity of the *râle*, produced by the passage of the air, will therefore be proportionately increased.

As to the cause of the crepitant *râle*—the pathognomonic auscultatory sign of pneumonia—M. Beau suggests a novel interpretation:—

..... "It is generally supposed that this sound is caused by the rupture of extremely small bubbles of mucus in the pulmonary vesicles. But if we consider that the sound is not at all modified after a fit of coughing, and also that it is distinctly perceptible in many cases of pneumonia before any expectoration takes place, it may be fairly asked whether it may not rather depend on the *friction of the pulmonary vesicles*, which, like the pleura, pericardium, and the synovial membranes, are probably somewhat *dried* (*dessechées*) by the existing inflammatory action."

(The cases are certainly not parallel; these tissues being serous, whereas the surface, at least of the vesicles, is of a mucous character.—*Rev.*)

"Besides, a sound, exactly similar to the crepitant *râle* of pneumonia, is readily imitated by blowing air into the lungs of a sheep, which have lost part of their moisture. I should not hesitate, adds, M. Beau, to adopt this explanation of the crepitant *râle*, if it was once proved to me that inflammation has the effect of drying the pulmonary vesicles.".....

After commenting at considerable length on the various other *rales*, M. Beau proceeds to treat of the auscultatory phenomena which are accompanied with a *metallic sonorousness*:—He says,

"*Laennec* was the first who discovered that when either a large cavern in the lungs, or the cavity of either pleura, contains both gaseous and liquid contents, we not unfrequently hear sounds which are altogether similar to those which a glass or metal vessel gives out when struck.

We cease to wonder at such an occurrence, when we find that it is not peculiar to the chest; metallic sounds being often heard in the cavity of the stomach, not only when the ear is directly applied to the abdomen, but when we listen at a considerable distance from it. We must confess that we do not sufficiently understand the exact conditions which are necessary for the production of this phenomenon, even in the case of inorganic vessels, whether of wood or of metal or glass. This, however, we know, that unless the air within them is thrown into vibration, they emit no sound; and so it is with abnormal cavities within the thorax which gives out any metallic resonance:—it is never heard, unless a vibration takes place in their interior.

Now such a vibration may arise from several causes:—thus, 1. It is pro-

duced when a patient, in whom such an abnormal cavity exists, is briskly shaken by the shoulders, and the liquid contents of the cavity are made to strike against its parietes: the sound produced by this succussion is sometimes very loud and may be heard at a considerable distance; it is *the metallic sound of succussion*.—2. The voice, the act of coughing, &c. may occasion in the cavity a resonance quite similar to that heard by speaking in a well or in a large deep vessel; this is *the metallic echo*.—3. The resonance of the glottic souffle may give rise, by the vibration of the inspired air, to a sound similar to that produced by blowing into a large empty vessel; this is *the amphoro-metallic sound*.—4. Lastly, the mere rupture of large bullæ of air in the abnormal cavity may produce a sufficient vibration to cause a short and irregular metallic sound; this is *the bullar tinkling*.

It is therefore apparent that metallic sonorousness is not so much a special abnormal sound, as a peculiar tone (timbre) which the normal or abnormal respiratory sounds acquire under certain circumstances. Thus the *metallic echo*, and the *amphoro-metallic sound*, are only peculiar resonances of the voice and of the glottic souffle; while the *bullar tinkling* is nothing but a *râle* produced by the rupture of large air-vesicles or bullæ, acquiring a metallic resonance in consequence of the property of the cavity wherein it takes place.*—*Archives Gen. de Médecine, Août.*

ON THE ELECTRICAL ACTIONS IN LIVING BODIES.

Dr. Riche, a physician at Obernay, is the author of the following remarks, on this curious and most interesting department of physiological science. He commences his paper with laying down these positions:—

1. "Every molecular action, whatever be its cause, produces a state of electrical tension.
2. Every time that the electrical tension is destroyed by neutralization, the recombination of electrical states, &c. there is a production of light (phosphorescence) with or without appreciable heat; and *vice versâ*.
3. In bodies which are good conductors, the neutralisation is instantaneous and consequently invariable; whereas, in those which are bad conductors, the neutralisation takes place more slowly, and becomes sensible to our senses and our instruments.
4. The electrical tension of a body is the sum of the electrical tensions of its molecules.
5. Every time that an electrical current encounters an obstacle in its transmission through any part of the body, there is a production of heat. A calorific current produces, in the same circumstances, an electrical current. Light develops both the one and the other in different degrees.
6. An alternating series of molecules, which are more or less perfect conductors of heat and electricity, produces, by their mere position, an electrical or calorific current.
7. Lastly, electricity, caloric, and light, seem to be only different modes of manifestation of molecular movements."

* It is physically possible that a drop may fall from the top of the cavity upon the fluid below, at the moment when the patient lifts himself up from the horizontal position, and that its falling may give rise to a metallic sound; but then it is difficult to conceive that a sufficient number of drops should be falling, one successively after the other, to enable us to explain the circumstance of this auscultatory phenomenon being heard for a considerable length of time.

Dr. *Riche* proceeds to develop with great ingenuity his views of the manifold operations of living bodies, such as the functions of muscular contraction, of animal heat, of secretion, &c. all of which he regards as so many manifestations and results of electrical agency. In short, he regards the whole living organism as a wonderful electrical machine, obeying the general laws which pervade the universe, but governed and controuled in all its changes by a higher immaterial principle, the nature of which is beyond our ken.

..... "Keeping in view," says he, "the above preliminary positions, we may well ask, what bodies in nature unite in themselves more of the conditions necessary to produce the electrical tension and neutralisation than those which are living and organised?"

A vesicular, cellular, and vascular organisation; fluids charged with saline, acid or alkaline principles, and holding in combination phosphorus, sulphur and certain metals; an incessant composition and decomposition from the first moments of life to the period of death; a circulation of fluids through vessels of every nature and in various directions; a consumption of a large quantity of oxygen, the most favourable condition for the development of electrical action; lastly, a nervous system diffused or centralised, isolated, transmitting with the rapidity of lightning impressions from without inwards, and reactions from within outwards. Is not every thing combined in such a system for developing a maximum of molecular action?

The torpedo, and other species of electrical fish, display the effects of this action most vividly in consequence of the peculiar apparatus with which they are provided. If it be said that the peculiarity of these organs proves that they are an exception in the animal kingdom, it may be justly answered, that these organs are merely electric condensers; that the source of their electricity is not in them, but that this is transmitted by the large and numerous nerves of the brain; for we know that any mechanical irritation applied to the brain or its nerves augments the intensity and frequency of the shocks, and that the division of these nerves suspends their power altogether. Do we require fresh proofs?

By experiments on frogs, it has been clearly shewn that there are in these animals electrical currents, which are independent of all external and foreign excitement or stimulus.

These currents produce muscular contractions, when they proceed from the nervous trunks to their ramifications, and sensations when they proceed in the opposite direction from the ramifications to the trunks.

Again, cats, horses, dogs, and man himself, often exhibit visible signs of electricity from exposure to the sun, or in consequence of friction of the surface or after muscular exertion: even electrical shocks, attended with sparks, have been occasionally given out by certain persons.

An electrometer exhibits signs of electricity, when it is brought in relation with a person placed on an *isoloir*. The mere approach of the finger will sometimes attract a needle which is finely suspended.

Lastly, in the operation of acupuncture, signs of an electrical condition have been distinctly perceived.

Now, what are the conditions which produce such sensible electrical effects in living bodies?

The blood is formed of vesicular globules, inclosing a dense coloured liquid, and floating in a liquid which is less dense and which combines all the conditions of electrical conductivity.

Through the vesicular parietes of these globules, there is incessantly going on an alternate endosmosis and exosmosis;—actions which are always accompanied, it is known, with electrical currents: the blood, therefore, is electrical by its very constitution.

Moreover the blood, being subjected to a continual circulation, must exercise a certain amount of friction on the walls of the vessels which contain it—a new source of electrical tension, which is then transmitted to the nervous twigs distributed on their outer coats.

Again, the blood traverses the lungs, gets rid of various excrementitious products, and is electrified anew by this very process of elimination: it receives the influence of the external air with all its conditions of vitality—that is to say, of the oxygenated luminous air, possessing an electrical tension which is variable according to the bodies dissolved or suspended in it. The heat developed by respiration, circulation, and muscular contraction, tends to increase the electrical tension of the blood, by the movements thereby incessantly communicated to all its molecules.

This heat itself has its origin in the innumerable electrical discharges which are taking place every where and at every moment, and in the obstacles which the electrical currents meet with in passing from one molecule to another, from one liquid to another, and through the numerous cellules, membranes, and the parietes of vascular tubes.

To these various sources of electrical generation we may add the functions of digestion, of secretion, and excretion: and even then we shall have but a most imperfect idea of the constant decomposition and recomposition which are going on at all points of the living frame."

..... "Will it be permitted us to regard the ganglionic nerves, arranged in inextricable meshes around the arterial trunks and ramifications, as conductors which transmit to the nervous centres the electricity developed in the parenchymatous structure of the viscera? According to our views, this electricity, accumulated and concentrated in the nervous centres, is destined to the production of muscular contraction, as well as to the maintenance of a uniform animal temperature, and to the regulation of the acts of organic composition and decomposition.

We admit, with Professor *Duges* of Montpellier, that muscular contraction is the result of a series of electrical discharges, which rapidly succeed each other on the contracted muscles. The heat produced by exercise, and the fatigue which follows upon it, seem to confirm this view of the matter; for the heat is the result of the neutralisation of electricity, and the fatigue is the result of nervous exhaustion."

Dr. *Riche* does not wish his readers to suppose that he regards nervous and electrical action to be strictly identical, or that the one term can be appropriately substituted for the other. Although there are numerous relations and points of resemblance between them, the former is in some mysterious manner modified by the living principle, so that we can never hope to imitate its phenomena by any artificial contrivance, however ingenious and complicated. Having again expressed his opinion that every muscular effort is the result of repeated electrical discharges in the muscles called into play—an opinion which is strongly confirmed by the circumstance, that in electrical fish the body of the animal is always observed to be made tense and contracted before it gives a shock—Dr. *Riche* suggests an explanation of various morbid states of the nervous system on the doctrines now propounded.

..... "The derangements of innervation may be considered—1, as the result of an insufficient or of an excessive electrical tension;—2, as the effect of an impediment to the transmission of electrical currents;—3, as dependent upon a feebleness of the will or on a depraved instinct, or on both together. (A well disciplined moral education, exercising, directing, and controuling the will, giving it the mastery over the body, and over each of the organs in particular, and keeping the instinct within limits compatible with the moral and physical welfare of the individual, is the best preservative against the last-named cause of nervous diseases.)"

Our author seems to be a partial believer in Animal Magnetism. Let us hear what he says :—

“ We may perhaps refer to the electricity of living bodies, whatever has been well confirmed as to the effects of animal magnetism; for example, the sedative and exciting phenomena produced by its operation. Every time that we operate with due precaution, perseverance, and impartiality, we shall produce these effects; there is no need of a blind credulity on the part either of the patient or of the operator. An organised body, better perhaps than any other, may be electrified by influence or by contact, through the means of electricity naturally developed in the living body, and which can be directed specially to such or such a suffering part. The experiment becomes still more easy, when the two actors are placed on insulating stools. It is the foolish pretension to produce extraordinary and marvellous effects, which some operators have put forth, that has prevented many useful results being obtained from animal magnetism.”

It remains now to notice briefly Dr. *Riche's* remarks on the properties of electricity as a remedial agent.

..... “ Whenever there is an excess of electrical tension present, evidenced by tetanic contraction, by spasms and painful cramps of muscles, we should endeavour to neutralise at once this condition by an energetic shock with the Leyden jar. The same mode of employing electricity might be used with advantage in certain cases of epilepsy, catalepsy, lethargy, &c. provided always, there is no reason to apprehend any tendency to hæmorrhage or inflammation in the brain or other parts of the nervous axis.

In the treatment of palsy, it is better to give a succession of smaller shocks by induction, than by the more powerful discharge of a Leyden jar. When we wish to act deeply with feeble currents, and still more when our object is to cauterise by means of the heat produced in metallic wires by a strong current of electricity, we must have resort to acupuncture; this too is the proper method of employing electricity for the purpose of discussing or altering the vitality of tumors and other morbid degenerations.”..... *Revue Medicale.*

PROFESSOR ARNOLD ON THE FUNCTIONS OF THE PNEUMO-GASTRIC AND THE ACCESSORY NERVES.

This distinguished Professor has long paid much attention to many of the disputed points in the physiology and pathology of the nervous system. The following observations on the functions of the pneumo-gastric and the accessory nerves—the 10th and 11th pairs of the cerebral nerves according to the arrangement adopted by most German anatomists—deserve our notice. They are based on the phenomena exhibited—1, by lesions of these nerves—and 2, by experiments performed on the lower animals.

The author has collected the following cases of morbid lesion from various sources.

a. A priest, 62 of age years, had from his youth been subject to gouty attacks. During the last seven years of his life, the stomach was the seat of his chief sufferings; for eighteen months his principal distress was a most voracious appetite, which could scarcely be satisfied with any quantity of food. The contents of the stomach, when rejected by vomiting, did not exhibit any symptoms of digestion, even three or four hours after being swallowed. The respiration became embarrassed; and when the dyspnoea was most severe, a whistling noise was made, as if the glottis was contracted.

The patient became much emaciated; the pulse was natural in point of frequency, but always rather strong; and there was never any pain felt in the

chest. For several weeks before death, opium in all forms produced disagreeable effects.

The employment of galvanism generally relieved the dyspnoea. Numerous purple spots made their appearance on various parts of the body; but these vanished for some time before death.

Dissection.—Two pints of a deep-coloured fluid were found in each pleural cavity; the lungs themselves seemed healthy; the pneumo-gastric nerves, from the nucha downwards, were smaller and softer than usual, resembling in consistency the nerves in putrid bodies which have been subjected for some time to maceration: the left nerve was smaller than the right one.

Swann, who has reported this case in his work *On the Local Diseases of Nerves*, supposes that the fluid in the pleurae had been effused only a short time before death. He adds that, in other two cases of death from thoracic complaints, he had found the nervi vagi considerably smaller than they are usually observed to be.

Professor *Arnold* remarks, that the symptoms in the preceding case are exactly those observed in animals after section of these nerves.

b. A woman, who died *poitrinaire*, had for a length of time been subject to an almost insatiable appetite.

On Dissection, both nervi vagi were found to be covered with minute reddish oval ganglia, of the size of small peas, and formed of the nervous substance itself, and not of the neurilema: the two sympathetic nerves were atrophied.

c. The next case is reported by Dr. *James Johnson*, in the *Medico-Chirurgical Review*, for July, 1836.

A lady, 76 years of age, had suffered for twenty years from pains in the head and back. When Dr. *Johnson* first saw her, she was greatly emaciated, and suffering from inexpressible anguish; she could not articulate a single word, and could scarcely swallow the smallest quantity of jelly. She experienced neither hunger nor thirst; food was introduced into the stomach by means of an oesophageal tube. She frequently complained of great tenderness in the epigastric region. Galvanism was tried, but it failed of producing any benefit. All the symptoms continued up to the period of death.

On dissection, the pons *Varoli*, the medulla oblongata and upper portion of the spinal cord were found in a state of *ramollissement*; the left vertebral artery, on its issue from its osseous canal, was considerably enlarged, so as to compress the corpus olivare and pyramidale of this side, which seemed smaller than their fellows on the opposite side. From the same cause the roots of the glossopharyngeal, the pneumo-gastric, the accessory and the hypoglossal nerves were somewhat pressed upon; their structure, however, did not exhibit any abnormal appearance. In the chest, there was discovered a small aneurismal tumor on the descending aorta, on the surface of which the left pneumo-gastric nerve was stretched, so as to take the form of the letter C. There was no contraction of the oesophagus in any part. The author, Dr. *Johnson*, was of opinion that respiration and digestion had been maintained by the intact nerves of the right side.

d. A case is mentioned by *Bell*, in his physiological and pathological researches on the nervous system, in which a convulsive affection of the sterno-cleido-mastoid and of the trapezius muscles was the most remarkable feature.

The patient was obliged to support his head with both hands; he complained that his body was always drawn round to one side with great force. The sterno-cleido-mastoid muscle during this time became tense as a board, and the right side also of the neck became almost equally stiff, owing to the convulsive contraction of the trapezius muscle. The head was drawn and fixed downwards, the face being turned to the left side, and the chin directed upwards. The breathing was unembarrassed, and there was no pain felt in the chest. When the spasmodic attacks were very violent, the muscles of the larynx be-

came affected, and the patient seemed to try to expectorate something that hindered him from speaking. These attacks were brought on by drinking any fluid; it was only during sleep that they ceased entirely.

Besides these four cases, now briefly reported, we may point to other two—one published by *Coppel* (*De Epilepsiâ e tumore nervo vago inherente*, Helmst. 1781,) and the other by *Tilgen*, (*Diss. obs. syst. fungi medullæ nervi vagi, &c.* Bonnæ, 1830,—*Raucedo, tussis, vomitus Ciborum incoctorum et potuum.*)

Professor *Arnold* has performed numerous experiments on dogs, rabbits, chickens, and pigeons, for the purpose of ascertaining the functions of the pneumo-gastric nerves.

It is unnecessary to give the details of these, and we shall therefore condense their general results in the following remarks.

The pneumo-gastric nerve is considered by Professor *Arnold*, contrary to the opinion of many physiologists, to be a sensory nerve, and as capable of communicating impressions made on its extreme filaments to the brain: these impressions being communicated with greater or less distinctness, according to the special functions of the mucous membrane on which it is distributed.*

It communicates the sensation of hunger, and the *besoin* of respiration. It has not any *direct* influence on the secretion, or on the quantity or quality of the gastric juice, (as supposed by *Tiedemann*, *Brodie*, *W. Philip*, &c. who have alleged that the secretion of proper gastric juice is suspended by the division of the *nervi vagi*;) nor upon the muscular contractions of the œsophagus and stomach, nor upon the process of chymification, nor on the muscles of the glottis, nor upon respiration or the movements of the heart, nor on the heat of the animal, nor on the process of arterialisation or the conversion of the black into red blood.

But as it is a nerve of sensation, and therefore cannot continue, after being divided, to communicate to the brain the *besoin* of breathing, the respiration becomes after their section slower and slower, the arterialisation of the blood is thereby impeded, the temperature of the body falls, the blood accumulates and stagnates in the cavities of the heart, in the great vessels, and in the lungs, and ultimately the animal dies suffocated. It thus appears that the fatal effects of the section of the *nervi vagi* are *indirect*, and are not, as many physiologists, have supposed, attributable to any immediate paralysis of the respiratory parenchyma, or of the muscles of breathing, but rather to the *besoin* of breathing being no longer felt by the animal, and the consequent gradual retardation and ultimate suspension of this vital process.

Hence the circulation of the blood through the lungs becomes more and more embarrassed, and as the blood is but imperfectly aerated, the functions of the nervous system gradually cease. The animal dies asphyxiated; but the asphyxia or suffocation is slow and progressive, unless there be some obstruction

* The division of the pneumo-gastric nerve in the neck is not productive of pain; but when the superior laryngeal branch is divided, acute suffering is experienced. The more exquisite sensibility of the larynx and glottis than that of the œsophagus and stomach is accounted for by Professor *Arnold* on the ground that some of the branches of the nerve are much less connected with, or involved in, its plexuses than others. Thus the superior laryngeal branches participate little, if at all, in the *gangliiform* plexus, whereas that portion of the nerve, which descends to the gullet and stomach, contributes largely to its formation.

Now it is an admitted position in physiology, that nerves, which expand themselves in plexuses, convey impressions to the brain much less quickly and distinctly than other nerves which are insulated.

of the glottis or of the windpipe—as is apt to be the case, more especially when a young animal is the subject of experiment.

The internal branch of the accessory nerve presides over the contractions of the œsophagus, and those of the glottis and stomach: it becomes united with the pneumo-gastric in the neck.

It is, therefore, very important, as well in experimenting on animals as in observing the effects of disease in man, to distinguish the symptoms induced by any lesion of these two nerves.—*Archives de Medecine, Août.*

MICROSCOPICAL DISTINCTION BETWEEN THE SENSORY AND THE MOTORY NERVES.

In a paper on the functions of the ganglionic nerves by Dr. *Remak*, in the June number of *Ammon's Monatschrift*, we observe the following paragraphs:—

“Every nervous bundle is composed of an assemblage of primary filaments, which do not communicate together, but are only in juxta-position even in the most intimate plexuses.” “*Ehrenberg* was the first to demonstrate by microscopical examinations that in every nervous bundle we may distinguish the motory from the sensory filaments; the former remaining after death quite cylindrical, and presenting only a slightly rugous surface, whereas the latter exhibit a distinctly varicose or nodulated appearance.

.... “Not only may we distinguish the sensory from the motory filaments, but we may also distinguish the filaments of those nerves belonging to organic life from those which belong to animal life: the former are of a red colour and extremely slender, whereas the latter are white and much more distinct.”..... “Usually we observe in a nervous bundle the three sorts of primary filaments—the motory, the sensory, and the organic. The organic filaments, which proceed from ganglions backwards to the spinal marrow, become more and more slender, until they are at length lost in the substance of the cerebro-spinal axis.”..... “In the cerebro-spinal system, there are two sets of actions performed; on the one hand, sensations perceived, and on the other, the reactions of volition. Two analogous actions are observed in the organic life; there is an organic perception, or what *Haller* called irritability; and there is a reaction, or the function of organic reflexion, so ably demonstrated by *Müller*. We may therefore say that in the animal economy there is a double *sensorium commune*; one, belonging to the life of relation, is the cerebro-spinal axis; and the other, belonging to organic life, is the ganglionic system.”

FATAL POISONING FROM ACONITE.

On the 11th of June, twelve patients affected with scorbutus and pellagra were seized with extreme *malaise* about an hour after swallowing a dose of what was supposed to be the fresh juice of the *cochlearia*. One of them, a man of about sixty years of age, after suffering from dyspnoea, vomitings, and great anxiety, died in the course of a few hours. Two middle-aged women also, affected with pellagrous insanity, became restless, then convulsed, and at length paralytic, and died. It was supposed at first that they had an attack of mania.

The remaining nine patients fortunately recovered under the use of active treatment; they were all more or less affected with the following symptoms:—rapid prostration of physical and mental energy, dilatation of the pupils, distressing headache and vertigo, pain and tension of the abdomen, accompanied with borborygmi and vomiting of green-coloured matters, great anxiety and

sense of oppression at the chest, coldness of the whole body but especially of the extremities, and livid colour of the nails, cramps in the legs, small and fluttering and occasionally imperceptible pulse, &c.—everything indicated a state of extreme hyposthenia or general prostration.

By the use of stimulants given inwardly, and of friction of the extremities with warm spirituous embrocations, these alarming symptoms were gradually removed. The *dissection* of the three persons, who died, revealed the following appearances:—

The vessels of the pia mater and of the arachnoid membrane were highly injected, and a small quantity of serosity was found between the meninges and the base of the brain. The lungs were gorged with blood; the heart was flabby and contained a small quantity of dark fluid blood. The mucous surface of the stomach and small intestines exhibited patches of vascular injection: the texture of the spleen was extremely soft. On making enquiries in the laboratory where the medicine had been prepared, it was found that the juice of the *cochlearia* had been inadvertently put into a vessel which contained some fresh juice of *aconite*, and that this mixture of the two had been dispensed to the patients. "This fact," says the reporter in conclusion, "while it is on the one hand deplorable by the loss of life which took place, is, on the other hand, very instructive; for it most distinctly confirms the accuracy of *Giacomini's* opinion, that *aconite* is to be regarded as a direct sedative or hyposthenic medicine, and that its proper antidotes are stimulants, such as spirituous liquors, opiates, cinnamon, &c. Some modern toxicologists have committed a serious error in regarding *aconite* as an acrid narcotic, which requires antiphlogistic remedies to counteract its stimulant effects. We observe no genuine traces of inflammatory action in the bodies of those who have fallen victims to this poison: the mere circumstance of patches here and there of vascular fullness along the alimentary canal proves nothing; for this appearance is observed in almost all cases where life is extinguished from the operation of sedative agents. The flaccid state of the heart, the softened lacerable condition of the spleen, the emptiness of the large blood-vessels, and the passive stasis of the blood in the substance of the lungs—all tend to prove that death was the result of a general prostration of the vital powers.—*Gazette des Hôpitaux*."

M. LEURET ON THE USE OF BELLADONNA IN EPILEPSY.

During the last three years, *M. Leuret*, physician of the Bicetre, has very extensively administered this potent medicine internally in cases of epilepsy, and the results of his practice have recently been published in the pages of the *Gazette des Hôpitaux*.

After detailing the reports of seventeen, out of numerous other cases treated with belladonna, the memoir concludes with the following observations:—

"If we now compare the results in these cases, we must see that, in almost every one, there was a decided amendment after the use of the remedy. This amendment was most conspicuous in the early period of the treatment; and the good effects seemed to be more lasting in proportion as the physiological effects of the belladonna were least marked. There was rarely an exception to this remark; in one case however there was certainly a striking coincidence in the cessation of the epileptic fits with the invasion of the almost maniacal delirium and agitation which followed the administration of the medicine. As a general remark, we may state that, in the majority of instances, it was rather in the diminution of the frequency than in the abridgment of the severity of the fits, that the amelioration was most decided. In some cases, however, the fits became not only much less frequent, but also much milder.

Another result of our observations is, that the effects of the internal use of belladonna on the general system usually do not remain energetic beyond a few days, even in cases where the doses have been considerable. Might it not therefore be prudent to alternate the use of this remedy with some other which is known to be useful in cases of epilepsy?

The effects of belladonna, internally administered, are most conspicuous on the circulation, the powers of vision, the nervous system, and the tongue.

1. In every one of our patients, the pulse was found from the second day of treatment to be accelerated: this acceleration continued for different periods of time, from three or four to fifteen or even twenty days, in different cases.

2. The same remark is applicable to the dilatation of the pupil; this having been observed in every case without exception. This effect was however more durable than the former one; it usually lasted for a length of time, and, in more than one case, during the whole course of the treatment.

Along with the dilated state of the pupil, there were, in some instances, confusion of vision, or partial blindness, myopia, &c.

3. The most remarkable of the nervous symptoms induced by the belladonna were a greater or less degree of restlessness and excitement, approaching sometimes to inordinate gaiety and at other times to furious delirium; frequent hallucinations; convulsive crying or laughing; a tottering in the gait, &c.

It is well worthy of especial notice that these nervous symptoms were always most decided in those cases, in which the disease resisted the use of the remedy. Should we consider them as the results of the disease rather than of the remedy?

4. One of the most constant and most durable of the effects of the belladonna is a very marked development of the papillæ of the tongue: there is frequently, at the same time, a sense of dryness of the mouth, and thirst. In no case, however, had we occasion to observe that feeling of burning heat in the mouth and throat, excessive thirst, and profuse diarrhoea, which some writers have attributed to the internal use of the remedy. In all our cases, the patients continued to take their food as usual.

With respect to the doses, in which we may administer belladonna, *M. Leuret* has, in almost every instance, been in the habit of ordering 30 centigrammes (about half a grain) at first, one-third part being given at equal intervals during the twenty-four hours, doubling this quantity on the second day, and on the fourth or fifth day raising it to 90 centigrammes, at least in some cases. By far the best preparation is the alcoholic extract; it may be given in the form either of pills or mixture.—*Gazette des Hôpitaux*.

Remark.—These observations, based as they are on the results of clinical experience during several successive years, deserve the notice of the practical physician.

We have no hesitation in saying that, in our opinion, the internal administration of sedatives is far too much neglected in the treatment of epilepsy and other allied affections of the nervous system. We have repeatedly seen excellent effects in such diseases from the exhibition of from ten to fifteen drops of the tincture of henbane three times daily for four, six, or eight weeks at a time—then omitted for a week or so, and again resumed in smaller and less frequent doses. Some of the metallic tonics, as the nitrate of silver, the sulphate of zinc, &c. either alone or in combination with quinine or valerian, may be advantageously given at the same time. In cases where a seton is deemed advisable, we have observed that it is often decidedly more useful if established over the heart than in the nape of the neck, as usually recommended. That epileptic and epileptiform diseases are, if not actually dependent upon, always accompanied with, a tendency to disturbances of the general circulation, must be known to every physician; and there is perhaps no remedy so efficacious against such disturbances as a permanent irritation in the cardiac region.—*Rev.*

CASES OF NEURALGIA TREATED WITH ACUPUNCTURATION.

CASE 1.—*Neuralgia of the Foot.*—A young woman, when 22 years of age, became affected with a most excruciating pain in the right foot, which was occasionally swollen and apparently highly congested. She was repeatedly bled and the foot was frequently leeches; but without effect. For ten months she was obliged to keep her bed. When admitted into the clinical wards of the Turin Hospital under the care of Professor *Riberi*, the seat of the pains and swelling was on the outer side of the foot; from this point the pains extended up along the leg, and the swelling affected the entire *dorsum* of the foot. Whenever the foot was lowered even a few lines below the horizontal level, the sufferings were much increased, and the same result followed the mere pinching of the skin. The "point de depart" of the pain was manifestly in the nerves of the foot. Antiphlogistic remedies were tried at first; but although the constitutional health, which had begun to suffer, was considerably improved under their use, there was no relief of the local neuropathy. M. *Riberi* then tried acupuncture: ten needles were inserted into the flesh, and allowed to remain in for the space of an hour. The operation was repeated four or five days afterwards, and subsequently at seven different times. The second time, the needles were left in for two hours; then for three, four, and even five hours. From the date of the first operation, the pains were so much relieved that the patient could rest on the affected foot, and in the course of a month she was able to leave her bed and walk about, her sufferings having entirely ceased.

CASE 2.—*Sacro-lumbar Neuralgia.*—Giuseppe Vola, 38 years of age, had in the course of the year been affected with hydrocele on both sides; he was radically cured in the one instance by incision, and in the other by injection of the sac with the tincture of iodine. Subsequently to this, he began to suffer from most severe sacro-lumbar neuralgia. "This I relieved as by enchantment," says Prof. *Riberi*, "by means of a single acupuncture; the needles were left in for three hours. Three days subsequently the pain returned; and again it was as quickly relieved."

The place where the needles were inserted, and the number used, are not stated.

CASE 3.—*Severe Brachial Neuralgia.*—A young woman, about 20 years of age, had been often affected with various nervous complaints. While being bled from the arm, she experienced, at the moment the incision was made, a violent involuntary trembling accompanied with an intense pain in the fold of the arm, and a rigid contraction of the fore-arm. This contraction continued with such violence that it could not be overcome by the use of splints or any other means that were used. When admitted into the hospital, the chief symptoms were the intense pain of the arm, complete loss of sleep, and considerable derangement of the digestive organs. The pain was of two kinds; the one dull and cramp-like, the other lancinating and burning. The seat of the former was chiefly in the course of the median nerve, and extended downwards from the fold of the arm to the fingers; whereas the latter, which was not accompanied with trembling of the affected parts, involved all the nerves of the arm, not excepting those of the skin, and sometimes passed on to the trunk, affecting the lungs and the heart: hence the sense of suffocation and of constriction of the chest, and the syncope, which often supervened during the paroxysms of suffering. The cicatrix presented a small, almost imperceptible, knot, which was certainly not the only, nor even the principal cause of the pain. The severity and continuance of the patient's sufferings at any time seemed to be much influenced by the state of the atmosphere.

The paroxysms of pain were brought on by either quickly extending or bending the fore-arm or all the fingers at one time, or by pinching the middle finger, or again by pressing on the cicatrix at the bend of the arm, or by gently rubbing the arm or fore-arm with the hand, &c.

Whatever was the exciting cause, the pain, developed either in the cicatrix or in the fingers, shot with the rapidity of lightning to every part of the limb, then to the shoulder, chest, and region of the heart, and the most frightful symptoms were induced.

To prevent all sort of friction, pressure, or extension of the limb, the patient, when walking lowered her shoulder and inclined her body to one side, as if she was affected with a lateral curvature of the spine.

After trying the effects of the internal use of belladonna and henbane, and of the external employment of prussic acid, &c., Signor *Riberi*, had recourse to acupuncture. From ten to twenty slender needles were inserted into the flesh of the arm along the course of the median nerve, and allowed to remain in for from two to four hours. This operation was practised about twelve times in the course of two months. After each acupuncture, a very marked relief was obtained; and ultimately the patient was completely and permanently cured. It deserves to be mentioned, as a very striking proof of the efficacy of the remedy, that from the very first day of its employment the patient was able to move the arm without much distress, and the pain, from being fixed, became moveable, and ceased at those points where the needles had been inserted; so that by multiplying these punctures, the pain became more and more distant, and at length finally ceased. After the sixth operation, the patient did not complain of any pain, unless when firm pressure was made over the course of the median nerve or of its principal branches; and after the tenth operation, she was able to use her arm freely in her domestic occupations.

CASE 4.—*Lumbo-sciatic Neuralgia.*—A countryman, 63 years of age, was admitted into the hospital with a large hydrocele of the right testicle. The urinary passages were excessively tender, and there was always more or less ischuria. The hydrocele had been preceded with severe pains not only in the affected testicle, but also in the right groin and in the loins, which had continued with great violence for ten days, and were followed by the occurrence of numerous varices of the veins in both legs, and more especially in the left one. Subsequently to this, the patient had suffered with symptoms of inflammation of the upper part of the spinal marrow—the chief symptoms were vertigo, stupor, spasmodic pains in the upper extremities, and afterwards a sense of dullness and weight in these parts. By the use of leeches, and of a seton, &c. these symptoms were entirely removed. The hydrocele, which was of several years standing, had acquired a considerable size; and the patient complained of intense neuralgic pains in the corresponding testicle, radiating from this point to the loins, and to the right sciatic region, in which it ultimately fixed.

After the evacuation of the water from the tunica vaginalis, the lumbo-ischiatic pain became more severe than ever, and the right limb was quite powerless. Twenty needles were inserted,—(it is not stated where)—and allowed to remain in for upwards of three hours. The operation was repeated four times; and a radical cure was obtained.

CASE 5.—*Painful Paralysis of the Limbs.*—A middle-aged woman was attacked, subsequently to a troublesome disturbance of the menstrual function, with severe pains in the loins, which were gradually followed by a paralysis of both lower limbs. Every now and then she experienced spasms, which extended from the limbs to the abdominal parietes and spine, and were accompanied with formication, lancinating pains, a sense of tightness and constriction and of great heat. To these symptoms succeeded a numbness in the limbs, extreme slug-

gishness in the intestinal and urinary evacuations, and at length a state of complete paralysis. Various local stimulants had been tried; but they seemed to be rather hurtful than otherwise. This indeed might have been expected, seeing that the disease depended upon a sub-inflammatory state of the lower extremity of the spinal cord and of the principal nervous trunks which issue from this part. Under the use of perfect quietude and a mild antiphlogistic regimen, the patient somewhat improved; and Professor *Riberi* then had recourse to acupuncture. Twenty needles were inserted into the sacro-lumbar region, and along the course of the sciatic nerves, and allowed to remain in for about three hours: this operation was repeated eight different times.

After the second operation, the pains had nearly ceased; and soon afterwards the bladder recovered its expulsive powers. At the end of three weeks from the first employment of the needles, the woman was able to leave her bed and walk about the wards without the aid of either crutch or stick. Gradually the limbs regained their healthy suppleness and force, and a complete and durable cure followed.

The last case reported by Professor *Riberi* was one of more than ordinarily severe lumbago, which had resisted all the usual remedies. Acupuncture was therefore had recourse to, and with the best effects; for ultimately the patient was quite cured. The operation was repeated ten different times; eighteen or twenty needles being introduced each time. It was remarked that the pain never returned in the seat of the punctures.

The series of cases now detailed proves, in a very satisfactory manner, the powerfully remedial effects which the operation of acupuncture has in relieving various forms of neuralgic suffering. The attention of practitioners is apt to be distracted in the treatment of this too-often most unyielding complaint by the multitude of remedies which are daily proposed: acupuncture is certainly one of the most efficient, and deserves a more extensive trial than has hitherto been given to it.—*Gazette des Hôpitaux*, No. 96.

REPORT ON M. PETREQUIN'S METHOD OF TREATING DEAFNESS.

Since the publication of *M. Petrequin's* Memoir on the Treatment of Deafness by alum gargles and insufflations,* various experiments have been made in different parts of France and Belgium, to ascertain the effects of these remedies, and the Royal Academy of Medicine has directed its attention to the subject in the course of last year. A lengthened and very favourable report has been recently laid before the Medical Society of Lyons by *M. Brachet*, of which the following brief account may be interesting to our readers.

After alluding to *M. Petrequin's* opinion, that the use of the Eustachian tube is similar to that of the holes made in a drum—viz. to renew the air within the cavity of the tympanum—and presenting an abstract of the eleven cases reported at length in his memoir, the following important conclusions drawn by *M. B.* from his experience are given: 1. That deafness is of very frequent occurrence in old people, in whom the mucous membranes do not perform their functions healthily, and who are subject to catarrhal congestions; also in those persons who have been subject to any of the numerous forms of inflammation of the pharynx.

2. That the inspection of the throat furnishes a means of exploration which greatly facilitates the diagnosis, by often revealing a chronic and indolent inflammatory state of its mucous membrane.

* Vide Medico-Chirurgical Review for July 1839.

3. That Sir *A. Cooper* was mistaken in considering the existence of a humming noise in the ear as a symptom exclusively of nervous deafness; a form of the infirmity which is also of much less frequent occurrence than he supposed.*

4. That it is a serious error to consider as incurable all cases of deafness, in which the patient cannot hear the ticking of a watch placed between his teeth; and that it is highly probable that many persons are from this mistake left without medical assistance, which if applied in time might have relieved the infirmity.

5. That the diagnosis of obstruction of the Eustachian tube, easily established when redness of the pharynx exists, is much less so, when this has disappeared, and when the lesion of the tube alone remains.

M. Petrequin, however, is of opinion that we may suspect the existence of this lesion by the varying condition of the sense of hearing in different states of the weather, and when it is somewhat better, for a longer or shorter period of time, after a fit of coughing or sneezing.

6. That the prognosis or chance of cure in this form of deafness is by no means so unfavourable as *B. Bell* and Sir *A. Cooper* have alleged; that often it may be cured by fluid or gaseous injections, or by cauterization of the opening of the Eustachian tube in the throat, or by the use of alum applied either in the dry or liquid form to the back of the fauces—as a gargle, or as a powder mixed with sugar and insufflated upon the fauces, or lastly, the direct application of a stick of alum—recommended so strongly and used so successfully by *M. Petrequin*. He believes that this salt has a special effect on the pharyngeal membrane, independently of its merely astringent operation. However this may be, it would seem that it has a most beneficial influence on many maladies of the mouth and fauces. *MM. Bretonneau* and *Pommier* have strongly recommended it in the treatment of diphtherite, *Signor Benuati* in various affections of the larynx, and *M. Velpeau* in diseases of the throat. Its administration is easy, and does not interfere with the employment at the same time of other remedies, as antiphlogistics, revulsives, purgatives, cauterisation, the catheterism of the Eustachian tube, and the baths of compressed air, which have been so successfully used by *M. Pravaz*.

Hitherto no trial has been made of injecting a weak solution of alum directly into the Eustachian tube; but it is more than probable that the practice will be found highly useful in many cases."—*Bulletin Medical Belge*.

Remark.—The reflections of *M. Petrequin*, based as they are upon the results of clinical experience, are certainly well deserving of attention. We should suggest the addition of tincture of capsicum to the alum gargle, as rendering it probably still more efficient in dissipating the chronic inflammatory state of the fauces and pharynx, which according to his observations, is so frequent an accompaniment of deafness.—*Rev.*

ON SOME REMEDIES AGAINST SLEEPLESSNESS.

M. Maz. Simon, after alluding to the various causes or states of the system that are apt to induce sleeplessness—in some of which it is merely one of many symptoms, and cannot therefore be relieved until the existing disease subsides,

* *M. Petrequin* is probably quite correct in his opinion, that the nervous form of deafness is not nearly so common as is generally imagined by medical men, and that the real cause of the infirmity in a great number of cases is a sub-inflammatory state of the mucous lining of the tympanum and of the Eustachian tube.

while in others it is an adjunct, or, as the French say, an epi-phenomenon, and may yield to remedies, although the disease remains unmitigated—proceeds to offer a few comments on some of the most valuable hypnotics, and on the best mode of employing them.

Opium, as a matter of course, is first on the list. From phthisis pulmonalis to cancer, and from hysteria to delirium tremens and tetanus, there are few morbid states of a non-phlogistic nature, in which sleeplessness may not give rise to a special therapeutic indication, and which may not be successfully combated by some preparation of opium.

An illustrious physician of the old school has said, that it is chiefly by the skill and tact displayed in the administration of this drug that one physician may be distinguished from another:—he was quite right; as no medicine requires more practical skill for its proper employment. “*Sacra vitæ anchora circumspectæ agentibus est opium; cymba Charontis in manu imperiti.*” says *Wedel*.

How different are its effects on the system in different cases, where it fails of producing its narcotic action! For example, when administered in many cases of phthisis and of neuralgia, we often observe that, although it may not quiet the cough in the one case, nor the pain in the other, it does not give rise to any unpleasant symptoms either on the local or on the constitutional disease; its action seems to be merely neutralised and nullified. But it is far otherwise when the sleeplessness is the special symptom for which the opiate is given; for then, if it fails as a soporific, the agitation of the patient is singularly increased, and a general uneasy restless state, with headache and feverishness, is induced.

There was some reason, therefore, for *Brown* exclaiming, “*Mehercle, opium non sedat.*” We repeat, it is more especially when sleeplessness in any case is the predominant phenomenon that opium is apt to fail in procuring sleep, and to aggravate the nervous excitement which may be present.

The reason of this difference in the action of the same medicine in different circumstances seems to be that, when it is given to abate severe pain, or to quiet the cough in tuberculous affections of the lungs, the nervous system participates only very partially in the local morbid action; whereas the state of sleeplessness implies the existence of a morbid state which is altogether more complex, and which involves the whole nervous system. Hence it requires a much more rigid analysis of the general condition of the entire economy, to detect the phenomena which may compromise the soothing effects of the remedy. The pulse furnishes us with perhaps the most safe rules to guide our practice under such circumstances. If it be full and at all hard, the use of opium is contra-indicated; but when it is soft, compressible, and, so to speak, nervous, we may then anticipate that it will prove soothing and soporific.

Besides the usual methods of exhibiting opium, there is one which is much less frequently tried than it deserves to be;—we allude to the plan so strongly recommended by that veteran of the German school, *Hufeland*. This consists in the application of a plaster composed of henbane and opium to the temples.*

* The proportions recommended by *Hufeland* are, of the plaster of henbane half an ounce, and of that of opium a scruple. (Does he mean the extract of the two plants?) These doses may be varied according to the symptoms of the case; or the extract of belladonna may be substituted for that of the henbane. Either may be reduced to a syrupy consistence by the addition of a sufficient quantity of laudanum, and may then be applied to the temples by means of a portion of lint dipped in the mixture.

To ensure the better penetration of the skin, it is always well to cover the part when wetted with a piece of oil-skin; the absorption or imbibition is thus rendered more certain.

We have several times found that in this way sleep may be induced, without the risk of inducing any of the unpleasant symptoms which not unfrequently follow the internal use of all narcotic medicines. It is admirably suited for those cases in which sleeplessness has been brought on by intense grief, or by protracted application of the mind. The application should be repeated every evening, just before bed-time, for several successive nights. We do not know that a fair trial has been given to it in that not uncommon set of cases in which there is a most distressing excitement of the nervous powers, bordering almost on mental derangement; also in delirium tremens, incipient insanity, &c.

But it is not by *material* or physical means alone, that we may sometimes succeed in inducing sleep; the vagaries of the mind itself may be often used to summon back this "best balm of nature," when frightened from our couches.

Some German writers, as *Gruithuisen*, *Purkinje*, &c. have made a special study of dreams, and, by analysing their phenomena in a philosophical manner, they have been led to the conclusion that the various phantastic images of every shape, colour and size, which are so often seen to dance before the eyes when we close them for sleep, are veritable elements of dreams.

Now *Burdach*, availing himself of this idea for therapeutic purposes, suggests that, as these fantastic images are the beginnings, as it were, of a dream, they will necessarily induce sleep, if we can but tranquillize ourselves sufficiently to regard them, and contemplate their play without any intellectual reflection. The experiment is easily made by every one; and we have often satisfied ourselves of the correctness of *Burdach's* suggestion.

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Some other writers, who have paid much attention to this curious department of physico-mental study, have suggested, as a useful means of inducing sleep, that the attention should be kept fixed upon the mental image of a calm unruffled sea, or on that of a vast desert, in which there is nothing to break the wide expanse of uniformity. It is this very uniformity of the image, pictured by the imagination, that brings on a drowsy unimpassioned state of feeling which is akin to sleep.

M. *Simon* would seem to be a partial believer in the remedial powers of magnetism, (we suppose animal magnetism); for he suggests that a trial of it should be made in certain cases of sleeplessness, in which the use of opiates, &c. either has proved ineffectual, or may be deemed inexpedient. He mentions the case of a lady, suffering from all the tortures of cancerous disease of the uterus, in whom he witnessed the soothing and soporific effects of this agency. But he is a timid disciple of Mesmerism: for he candidly confesses that "the fear of acquiring the name of a magnetiser prevented him from repeating his experiments in the case alluded to more than twice or thrice!" (We need scarcely say that whatever withdraws the attention from a local suffering, and keeps it fixed on any mental exertion, will often have the effect of making us entirely insensible to pain. How often do we read of soldiers and sailors, during the hurry and excitement of action, being actually not even aware that they have sustained some frightful wound for some time afterwards? and who has not experienced in his own case that many a sharp ache has been charmed away by the report of some unexpected news, by the lively conversation of a friend, by the perusal of a fascinating book, or by the mere repetition to oneself of various passages from some favourite author? There is therapeutic as well as moral wisdom in old Spencer, when he says,—

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TREATMENT OF SMALL-POX WITH MERCURIAL APPLICATIONS.

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drium which gradually extends towards the epigastric region, by unpleasant eructations, and a purging of white or greenish serous frothy matters. The eyes are languid, the face is pale, and the tongue dry; there is a most unpleasant, often metallic, taste in the mouth; the thirst is great, the skin cold, and the pulse small and rapid; subsequently, the colicky pains become more severe, and the region of the pancreas is the seat of a burning pain, increased by the slightest pressure, &c. &c. The best treatment for the relief of these symptoms is to cause a derivation to the surface of the skin by the use of hot baths and epispastics, and to soothe the local suffering by administering some opiate preparation. Subsequently the use of mild astringents, as calumba, or the Peruvian balsam, is decidedly useful.

The acetate of lead promises to be of considerable benefit; and so does iodine, provided no inflammatory symptoms be present. Tonic and analeptic medicines will be required to restore the general health."

Mercurial Miliaria is described to be a much more serious disease than is generally imagined.

..... "This form of miliary eruption is connected with a striking disturbance of the nervous system. An imperfect pyrexia, attended with a most distressing sense of inward anxiety, and sometimes with more alarming symptoms, such as great restlessness, delirium, and even convulsions, precede its appearance. The pulse is usually small, soft and compressible; the urine is very pale; and the skin is bedewed with a faint-smelling perspiration.

Often the eruption disappears for a time and then returns; and sometimes this alternate retrocession and re-appearance take place repeatedly. This form of mercurialism usually terminates fatally; death being attributable either to an extreme exhaustion of the nervous energies, or to a dangerous pulmonary congestion being induced during the retrocession of the eruption. The treatment of such a case should consist in endeavouring to cause a derivation of the morbid action to the skin, in counteracting the alteration of the blood, and in relieving the nervous system."

Mercurial Ulcers..... "These usually form on the mucous membrane of the mouth or nose. There is observed a dark-red or livid spot, which becomes white, then ulcerates and discharges at first a thickish grey-coloured sanies, and afterwards a thin ichor, giving to the mouth a fetid smell which is easily recognised.

The ulcer gradually enlarges, creeping along the gums and inner surface of the cheek; it almost always gains more in extent of surface than of depth. It bleeds upon the slightest touch, and the pain is often most excruciating when any thing is applied to it. Sometimes we observe that a distinctly venereal sore changes its nature, and assumes the mercurial character. When such is the case, it becomes first encircled with a livid circle; the edges swell; small bloodvessels are often seen creeping along its surface; and the purulent discharge becomes of a thinner consistence.

Whenever such a change takes place, the use of mercury should be at once discontinued; opiate and mucilaginous applications are best at first, and subsequently aromatic fomentations and gargles; steel, mineral acids, &c. will be required to repair the health of the patient."

..... "*Mercurial Neuralgia* is usually erratic, and not fixed in one part; sometimes it shifts about along the course of one nerve, and at other times it passes quickly from one nerve to another. It has distinct, but generally irregular, periods of intermission. The pain is always aggravated in damp weather, and by the application of wet or moisture to the affected part; and the patient finds himself easier in warm dry weather and in bed.

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We have several times found that in this way sleep may be induced, without the risk of inducing any of the unpleasant symptoms which not unfrequently follow the internal use of all narcotic medicines. It is admirably suited for those cases in which sleeplessness has been brought on by intense grief, or by protracted application of the mind. The application should be repeated every evening, just before bed-time, for several successive nights. We do not know that a fair trial has been given to it in that not uncommon set of cases in which there is a most distressing excitement of the nervous powers, bordering almost on mental derangement; also in delirium tremens, incipient insanity, &c.

But it is not by *material* or physical means alone, that we may sometimes succeed in inducing sleep; the vagaries of the mind itself may be often used to summon back this "best balm of nature," when frightened from our couches.

Some German writers, as *Gruithuisen*, *Purkinje*, &c. have made a special study of dreams, and, by analysing their phenomena in a philosophical manner, they have been led to the conclusion that the various phantastic images of every shape, colour and size, which are so often seen to dance before the eyes when we close them for sleep, are veritable elements of dreams.

Now *Burdach*, availing himself of this idea for therapeutic purposes, suggests that, as these fantastic images are the beginnings, as it were, of a dream, they will necessarily induce sleep, if we can but tranquillize ourselves sufficiently to regard them, and contemplate their play without any intellectual reflection. The experiment is easily made by every one; and we have often satisfied ourselves of the correctness of *Burdach's* suggestion.

We must not, be it remembered, endeavour at the time to analyse and explain the phenomena, but only keep our attention fixed upon the fantastic image, without doing more. Gradually it (the image) becomes fainter and more indistinct, until a complete dreamy state with all its faëry scenes comes on:—now, *to dream, is to sleep.*

Some other writers, who have paid much attention to this curious department of physico-mental study, have suggested, as a useful means of inducing sleep, that the attention should be kept fixed upon the mental image of a calm unruffled sea, or on that of a vast desert, in which there is nothing to break the wide expanse of uniformity. It is this very uniformity of the image, pictured by the imagination, that brings on a drowsy unimpassioned state of feeling which is akin to sleep.

M. *Simon* would seem to be a partial believer in the remedial powers of magnetism, (we suppose animal magnetism); for he suggests that a trial of it should be made in certain cases of sleeplessness, in which the use of opiates, &c. either has proved ineffectual, or may be deemed inexpedient. He mentions the case of a lady, suffering from all the tortures of cancerous disease of the uterus, in whom he witnessed the soothing and soporific effects of this agency. But he is a timid disciple of Mesmerism: for he candidly confesses that "the fear of acquiring the name of a magnetiser prevented him from repeating his experiments in the case alluded to more than twice or thrice!" (We need scarcely say that whatever withdraws the attention from a local suffering, and keeps it fixed on any mental exertion, will often have the effect of making us entirely insensible to pain. How often do we read of soldiers and sailors, during the hurry and excitement of action, being actually not even aware that they have sustained some frightful wound for some time afterwards? and who has not experienced in his own case that many a sharp ache has been charmed away by the report of some unexpected news, by the lively conversation of a friend, by the perusal of a fascinating book, or by the mere repetition to oneself of various passages from some favourite author? There is therapeutic as well as moral wisdom in old *Spencer*, when he says,—

"It is the mind that maketh good or ill,
The wretch or happy....."

We should therefore be cautious before admitting the existence of any special agency, such as the animal magnetisers seek to prove; although we must, at the same time, confess that it is far from improbable that living animal bodies may have some modes of operation, one upon the other, which have hitherto escaped our exact scrutiny.—*Rev.*)

M. Simon, in concluding his observations, alludes to that sleeplessness which is not unfrequently noticed at the decline of inflammatory and other acute diseases, and very properly says that a restless state of the nervous system is apt to be induced by pushing antiphlogistic measures too far, or by continuing their use beyond a certain period; the cautious use of gentle tonics, and more especially of light food, being in general the best remedy in allaying irritation and inducing sleep.—*Bulletin de Therapeutique.*

TREATMENT OF SMALL-POX WITH MERCURIAL APPLICATIONS.

It is scarcely necessary to remark that the *ectrotic method*,—which consists in the application of the nitrate of silver to the pustules—of treating small-pox was proposed some years ago by M. Serres as a most effectual means not only of preventing the pitting of the surface, but also of rendering the constitutional disturbance less severe. It has been fairly tried by MM. Velpeau and Bretonneau, as well as by many other medical men; and their experience has been on the whole unfavorable to its adoption. The chief objections seem to be the pain which is caused, and the great difficulty of applying the caustic to all the pustules.

Subsequently M. Serres has strongly recommended the application of the *emplâtre de vigo*, a mercurial ointment or plaster, to variolous pustules; and we are pleased to find that the experience of several other good observers has fully confirmed the favorable reports made by him of this practice. In the late epidemic of small-pox in Paris, Dr. Briquet gave an extensive trial to the mercurial inunction, more especially of the face and the other exposed parts of the body; and the result of his observations is strongly in favour of M. Serres' proposal. Within the last few months, M. Chomel also has been adopting it in his practice at the Hôtel Dieu; and the following cases are drawn from his clinique.

Case 1.—A girl, 19 years of age, was admitted with all the symptoms of regular semi-confluent small-pox. A mask made with the *emplâtre de vigo* was applied over the face on the second day of the eruption. Although it was torn off by the patient four and twenty hours afterwards, its effects seemed to be very remarkable. Whereas the pustules on the neck, chest, and body exhibited all the usual characters of genuine small-pox, the eruption on the face appeared to be quite abortive, being either merely vesicular, or altogether solid and papular. Wherever the plaster had been applied, such was the character of the pock; but in every other part it was distinct and full-formed.

Case 2.—In the St. Augustine ward there is another variolous patient, who has been treated in the same manner, and who is now convalescent. The desquamation has followed its usual course, except on the face, where scarcely any scabs have formed, and then only in those points which had not been acted upon by the plaster. This case is interesting, as it confirms the assertion of M. Serres, that there is no desquamation under the influence of the mercurial plaster.

Case 3.—In the same ward there is a woman, who is in the sixth month of pregnancy, and is labouring under well-marked small-pox. M. Chomel did not

hesitate to apply the mercurial plaster to the face; and the inspection of the patient will shew how complete the success has been. The form of the eruption has exhibited in this patient some peculiarities. A semicircular zone or band of a bright red colour, and about two inches broad, extended from over the lumbar vertebrae to the axilla of either side: the redness did not disappear on pressure. The temperature of this zone was greater than that of the rest of the body. At first it seemed to be different from the general malady; but soon there were developed over the course of the zone distinct, but extremely small, and agglomerated variolous pustules.

The eruption on the face became quite abortive, the pustules remaining small and of a whitish appearance; there was no scabbing, excepting at the edges of the lips and the eyelids, where the action of the mercurial mask had not taken effect.

These cases appear to confirm the opinion of M. Serres, that the mercurial application to the pustules of small-pox has a most powerful influence in modifying their usual course; the pustules so treated being not surrounded with their usual red areola, the suppuration being very imperfect, and the swelling and tension of the integuments being trifling or altogether absent.—*Gazette des Hôpitaux*.

Remark.—The circumstance of this practice being favourably reported of by so experienced and cautious a physician as M. Chomel, gives us a warrant to try it fairly on this side of the Channel.—*Rev.*

M. LUGOL ON CUTANEOUS SCROFULA.

A few extracts from some of the lectures recently delivered by this distinguished physician will be read with interest.

..... "Scrofula of the skin sometimes commences with a simple fissure or crack, which causes a most troublesome itching. A crust or scab forms upon the part; and, when this falls off, we often find an ulcerated surface of greater or less depth and extent.

At other times, the disease begins with a red patch; the skin becomes thickened and indurated; it assumes a livid aspect, and pustules form upon it—in other words, there is an eruption of the pustular form. Occasionally the pustules are excessively solid and hard, and are then improperly termed tubercles;—improperly we say, because they always terminate in suppuration, and then exhibit no difference from pustules.

In a third set of cases, cutaneous scrofula commences by the generation of a tuberculous deposit under the skin, which becomes in consequence elevated and detached. In course of time, this becomes reddened and eventually gives way; and the tuberculous matter is then found transformed into a genuine pustule.

Cutaneous scrofula most frequently is seen in the teguments of the face; very often on the *alæ nasi*, the cheeks, chin, and eyelids. It is much more rare on the neck, body, and extremities."

..... "The disease necessarily involves a derangement of the functions of the skin. One of the most remarkable symptoms is an increase in the perspiration of certain parts, especially the *axillæ*, hands, and feet. There is established a sort of supplementary function, which becomes a *bæsis*, and an indispensable condition of health. I often see a young girl in whom this abundant secretion of the transpiration is almost constantly present, and who is at the same time affected with leucorrhœa.

If this excessive discharge of the perspiration is suddenly checked, the health often suffers; a troublesome cough, for example, and a state of general malaise

is induced; and these symptoms will sometimes not yield, until the checked secretion is restored."

Frequent Co-existence of Lice with Cutaneous Scrofula.

"The greater number of the scrofulous patients in this hospital are affected with them; and for many years past I have had many opportunities of pointing out this curious coincidence to my pupils. It would be quite erroneous to refer this to any want of cleanliness on the part of the patients; for they are all obliged to attend to their persons with the greatest care; and moreover we not unfrequently observe these vermin in scrofulous children of the higher classes, who are invariably kept with the greatest nicety.

Another sign, or perhaps more properly speaking, another frequent complication of scrofula, is the tendency to severe chilblains; whenever these are very obstinate, you may suspect the person's constitution.

In some cases, the skin is unusually dry and subject to pruriginous eruptions; in others, it is generally moist and unctuous.

It is of great practical importance to ascertain the constitution of a patient affected with any cutaneous disease; for all the forms of it are invariably more severe and unyielding in persons who are scrofulous. How often do we find that, when the eruption on the skin is removed, an ophthalmia, or leucorrhœa, &c. makes its appearance, and resists for a great length of time all remedial means. When some of the forms of impetigo occur, the cuticle, not only of the pustules themselves but of the entire extremity, or of the face if it happens to be effected, separates, leaving an immense excoriated surface. I lately had a young man under my care, in whom both arms were completely denuded of their epidermis, and a great part of the lower extremities at the same time. It is interesting to watch the reproduction of the cuticle in such cases: various islands, as it were, are formed in different parts, and these gradually widen more and more until they coalesce, and the entire surface is re-covered with its epidermal investment."..... *Gazette des Hôpitaux.*

TWO CASES OF SPONTANEOUS EMPHYSEMA.

The first case occurred during the act of parturition, and the patient gradually recovered.

A woman, 28 years of age, and who had never suffered from any affection of the respiratory organs, suddenly during the pains of childbirth, lost her voice, and at the same time felt a swelling on the fore part of the neck; this gradually extended over the front of the chest, the sides of the neck and the face.

The integuments were so much puffed out, especially on the face, that the patient could hardly be recognised by her attendants; when pressed upon, a distinct sound of crepitation was audible. The patient felt a good deal oppressed at the chest, and complained of a sense of tingling over the skin. As the labor was very tedious, the child was delivered by means of the forceps. The emphysema continued with but little diminution for four or five days, and then gradually subsided; but for some time afterwards the crepitation was perceptible in the parts which had been inflated.

This species of emphysema is not unfrequently observed to take place after any violent exertion, in consequence, no doubt, of the person forcibly holding his breath, while the lungs are more than usually filled with air. The air must escape from the upper part of one of the superior lobes of the lungs, as the em-

physematous swelling almost always occurs at first about the lower part of the neck. Usually all that is necessary to be done is to keep the patient perfectly quiet and silent.

The second case was more serious.

A young girl had been ailing, for five or six months, with symptoms which were attributed to the approach of menstruation. She suffered at the same time from a certain degree of difficulty in swallowing, and an uneasy feeling in her throat; but these symptoms, although constant, were considered by her medical attendant as of an hysterical nature.

On the 20th of March, however, she became decidedly worse; she complained of severe pain in the throat, and an utter inability to swallow any solid food; the jaws could not be separated but with the greatest difficulty. For the next three days, she continued in nearly the same state; but, on the evening of the 23rd, the face and neck became suddenly emphysematous. Every time that she cried, the distention became more considerable. Next day, it had extended over both arms, the chest and abdomen; several scarifications were made in different parts, but the air was found to accumulate as quickly as it escaped. On the evening of the 25th she died.

Dissection.—No lesion could be detected at any point of the lungs; but on examining the larynx and trachea, a minute ulcerated opening was observed in the right ventricle, immediately below the vocal chord. Four or five superficial ulcers also were found on the pharynx.

Might not the operation of tracheotomy have been useful in such a case? The difficulty is in diagnosing the seat of the rupture, whence the air has escaped into the cellular tissue.—*Gazette Medicale*.

ON THE DISEASES INDUCED BY MERCURY.

Dr. *Dieterich*, of Munich, has published a lengthened work on the numerous forms of mercurial disease, in which he treats at length of all the maladies which are, or are said to be, induced by an excessive or imprudent use of this mineral—as hydrargyria or mercurial fever, salivation, pancreatic ptyalism, diabetes, hydrosis or excessive perspiration, various exanthemata, as eczema, herpes, miliria, &c. different forms of ophthalmia, angina, periostitis, enlargement of the lymphatic and also of the parenchymatous glands, ulceration of the mucous membranes, neuralgia, asthma, tremors, paralysis, and several other diseases, including a peculiar form of cachexia.

We have no intention of following our worthy author through his somewhat lengthy lucubrations. We shall select only a few excerpts.

In the treatment of salivation he recommends, besides the use of gentle aperients, sudorifics and cooling astringent gargles, the internal administration of iodine and creosote, both of which remedies have, he thinks, a marked effect in giving tone to the weakened salivary glands. The formula in which he prescribes the latter medicine is as follows:—

R. Olei Creosoti ℥ss.

Pulv. Lycopodii ℥ij. Misc.

Divide into sixty pills, of which three are to be taken twice a day at first, and the dose to be gradually raised to five three times in twenty-four hours.

The following are said to be the symptoms, &c. of *Mercurial affection of the Pancreas*.

“The pancreatic mercurial ptyalism, or alvine sialorrhœa, has hitherto been generally confounded with the mercurial diarrhœa, which often accompanies it: it may, however, exist alone. It is indicated by a pain in the left hypochond-

drium which gradually extends towards the epigastric region, by unpleasant eructations, and a purging of white or greenish serous frothy matters. The eyes are languid, the face is pale, and the tongue dry; there is a most unpleasant, often metallic, taste in the mouth; the thirst is great, the skin cold, and the pulse small and rapid; subsequently, the colicky pains become more severe, and the region of the pancreas is the seat of a burning pain, increased by the slightest pressure, &c. &c. The best treatment for the relief of these symptoms is to cause a derivation to the surface of the skin by the use of hot baths and epispastics, and to soothe the local suffering by administering some opiate preparation. Subsequently the use of mild astringents, as calumba, or the Peruvian balsam, is decidedly useful.

The acetate of lead promises to be of considerable benefit; and so does iodine, provided no inflammatory symptoms be present. Tonic and analeptic medicines will be required to restore the general health."

Mercurial Miliaria is described to be a much more serious disease than is generally imagined.

..... "This form of miliary eruption is connected with a striking disturbance of the nervous system. An imperfect pyrexia, attended with a most distressing sense of inward anxiety, and sometimes with more alarming symptoms, such as great restlessness, delirium, and even convulsions, precede its appearance. The pulse is usually small, soft and compressible; the urine is very pale; and the skin is bedewed with a faint-smelling perspiration.

Often the eruption disappears for a time and then returns; and sometimes this alternate retrocession and re-appearance take place repeatedly. This form of mercurialism usually terminates fatally; death being attributable either to an extreme exhaustion of the nervous energies, or to a dangerous pulmonary congestion being induced during the retrocession of the eruption. The treatment of such a case should consist in endeavouring to cause a derivation of the morbid action to the skin, in counteracting the alteration of the blood, and in relieving the nervous system."

Mercurial Ulcers..... "These usually form on the mucous membrane of the mouth or nose. There is observed a dark-red or livid spot, which becomes white, then ulcerates and discharges at first a thickish grey-coloured sanies, and afterwards a thin ichor, giving to the mouth a fetid smell which is easily recognised.

The ulcer gradually enlarges, creeping along the guma and inner surface of the cheek; it almost always gains more in extent of surface than of depth. It bleeds upon the slightest touch, and the pain is often most excruciating when any thing is applied to it. Sometimes we observe that a distinctly venereal sore changes its nature, and assumes the mercurial character. When such is the case, it becomes first encircled with a livid circle; the edges swell; small bloodvessels are often seen creeping along its surface; and the purulent discharge becomes of a thinner consistence.

Whenever such a change takes place, the use of mercury should be at once discontinued; opiate and mucilaginous applications are best at first, and subsequently aromatic fomentations and gargles; steel, mineral acids, &c. will be required to repair the health of the patient."

..... "*Mercurial Neuralgia* is usually erratic, and not fixed in one part; sometimes it shifts about along the course of one nerve, and at other times it passes quickly from one nerve to another. It has distinct, but generally irregular, periods of intermission. The pain is always aggravated in damp weather, and by the application of wet or moisture to the affected part; and the patient finds himself easier in warm dry weather and in bed.

It would seem that this form of neuralgia is very much affected by the electrical conditions of the atmosphere.

By far the best remedies are sedatives, and ferruginous preparations."... ..
—*Journal des Connoiss. Med. Chir. Juillet.*

ON THE SEAT OF GONORRHOEA IN WOMEN.

In the last Number of the *Medico-Chirurgical Review*, page 207, there is a notice of M. Gibert's opinions on this subject. He maintains that "the seat of election of the disease in women, to use his own phrase, is the meatus urinaris, as in man; and that in the majority of cases the vagina is little, if at all affected, but that the cervix uteri very generally is so when the disease continues."

Although the correctness of these statements may be questioned by many, it is admitted by all the best writers on gonorrhoea in women, that the chief seat of the discharge varies a good deal in different cases.

Old Astruc described four forms of the disease..... "The *first* occupies the prostate, which in women embraces the urethra and opens into the vulva under the clitoris on each side of the urethral orifice; the *second* affects the glands of Cowper, situated in the perineum near the anus, which open at the side of the carunculae myrtiformes; the *third* affects the botryform glands on the surface of the vagina (vaginitis); and the *fourth* the cells on the surface of the urethra (urethritis)."

Boaquinon also, the translator of B. Bell's work on the venereal disease, admits four varieties of the disease, which, he says, is—1, either limited to the inferior part of the vagina;—2, or is seated in the mucous glands which surround the orifice of the urethra, and whose excretory ducts open on the membranous plane which extends from the clitoris to the superior arch of the vaginal opening;—3, or affects the urethra itself;—or 4, the numerous glands with which the larger and smaller labia are supplied.

M. Ricord, while he admits that he has not been able to discover any exact relation between the special nature and the particular seat of the disease, says that, "whatever may be the cause of the discharge, the vulva, the urethra, the vagina, and the uterus, may be either separately or simultaneously affected."

It may be useful to offer a very few remarks upon these four forms—viz: *urethritis*, *vulvitis*, *vaginitis*, and *uteritis*—which, be it remembered, are often co-existent in the same case, but which occasionally are observed separate and uncombined.

Blennorrhagia Urethralis (Urethritis).—Much difference of opinion has existed among authors as to the frequency of this form. *Swediaur* says that it is only the orifice of the canal which is inflamed in gonorrhoea, and tells us that he had never seen a single case in which the urethra was the seat of the disease. B. Bell however admits that the discharge sometimes comes from the canal of the urethra. *Boaquinon* has seen cases in which a urethritis continued a long time without any cotemporaneous affection of the vagina..... "It is not uncommon to observe this form of gonorrhoea engender an inflammation of the vagina." M. *Cullerier* however seems to be of a different opinion: according to him, by far the most frequent seat of the discharge is the vagina, and the pus, which seems to come from the urethra, is only deposited on its surface.

M. Ph. *Boyer*, although he admits that in all cases the urethra is affected, says, that as the chief phenomena take place in the vagina, in consequence of its extensive surface, and as the inflammation of the urethra is observed only in the early stage, he prefers the term *vaginitis*, to that of *urethro-vaginitis*, to denominate the disease.

On the other hand, M. Ricord tells us, as the result of his experience, that urethritis is so frequent, that he should calculate it to be present in eight out of every twelve cases of gonorrhœa in women caused by impure connexion.

This statement is certainly not warranted by our own observations. We should rather say that it is only in rare and exceptional cases that urethritis occurs primarily and independently of any affection of the vagina and the other neighbouring structures; and that these parts are very frequently the seat of the disease, while the urethra is little, if at all, affected.

When the urethra in women is inflamed, the ardor urinæ is often more severe than it is usually in men, and the bladder is apt to be very soon affected in consequence, no doubt, of the shortness of the urinary canal in the former.

Blenorrhagia Vulvaris, (Vulvitis).—Of all the forms of the disease, this is attended with most suffering: hence, whenever a woman complains of severe pain in the parts, dreads the passage of the urine, and walks with difficulty and distress, we may be sure, before examining her, that the blenorrhagia is seated in the vulva. It would seem to be the case sometimes, according to the experience of *John Hunter* and others, that all the symptoms of vulvar blenorrhagia may be present, and yet the parts, although tender on the slightest pressure, do not exhibit, on examination, the usual appearances of inflammation. The discharge is occasionally so very acrid that it excoriates not only the external genital organs, but also the inside of the thighs, if it come in contact with them. This is most frequently observed when there are numerous flat tubercles on the vulva—a very common complication of this form of blenorrhagia.

When the inflammation of the vulva is intense, it is apt to become deep-seated and œdematous. An abscess sometimes forms in the substance of the exterior or interior labia, and is apt to leave a most troublesome fistula. The carunculous opening of the urethra is generally inflamed in all cases of vulvitis; but its canal is not necessarily affected. The same may be said in relation to the vagina.

The blenorrhagia of children and of young girls, who have never been exposed to any sexual contagion, is always *vulvar*, and seldom extends inwards, either along the urethra or vagina. We may remark that a very obstinate form of the disease is apt to be induced by onanism.

Blenorrhagia Vaginalis (Vaginitis).—This is certainly one of the most common forms of the disease in females.

In certain cases—and this circumstance deserves especial notice—the inflammation does not affect the outer portion of the canal, but only its upper or interior half. We must not, therefore, conclude in any case that there is no vaginitis, merely because the external genital parts are not at all inflamed. It has been, no doubt, in cases of this sort that *Hunter* has seen the disease communicated to men by patients, who did not exhibit the slightest outward mark of being infected.

No form of the disease is so prone to pass into the chronic state, as the vaginal: in spite of the most judicious treatment it will often prove most obstinate, and last for many months. In a vast number of the cases discharged from a hospital as cured, the disease returns soon after, and thus the infection is more and more extensively propagated.

Blenorrhagia Uterina (Uteritis Colla).—When the disease affects the uterus, it is always limited to the neck of the organ. The inflammation is usually superficial, and seldom produces much tumefaction of the part. Writers differ a good deal as to whether the cervix is generally more sensitive than in health, or not:—some say one thing, and some another. The exudation from its sur-

face is usually very viscid; it is either nearly transparent, or it is opaque and puriform.

The disease is apt to be especially obstinate during pregnancy, and often will resist every remedy that is tried, until after delivery takes place.—*Journal des Connoiss. Medicales.*

TREATMENT OF GONORRHOEA WITH CUBEBS AND ALUM.

A correspondent in the *Journal des Connoissances Medicales* recommends very highly a combination of powdered cubebs and alum in the treatment of gonorrhœa, and adduces several cases in illustration of its efficacy. The formula, which he uses, is the following:—two ounces of cubebs and half an ounce of powdered alum are to be mixed well together and divided into nine doses, of which one is to be taken three times in the course of twenty-four hours.

A cure is said to be usually effected in from six to eight days.

Remark.—It is more than probable that alum has not been used in cases of gonorrhœa so much as it deserves to be. That the salt is rapidly absorbed into the system, and is eliminated, in a great measure, by the urine, appears from numerous experiments.

APHORISMS OF PRACTICAL SURGERY, FROM DUPUYTREN'S LECTURES.

Dr. *Bigal*, a pupil of the late *Surgical Chef* of France from the year 1818 to 1822, has published a series of aphorisms drawn from the lectures delivered by him at the *Hôtel Dieu*. They amount to ninety; we shall select what seem to us to be the most valuable.

1. When the tibia and fibula are fractured at the same time, the seat of the fractures of the two bones is never at the same point.

2. The fracture of the upper part of the fibula is always a direct fracture, and is never produced by a *contre-coup*, as *Pouteau* has asserted. The patients may be able to walk about immediately after the accident. It differs from fracture of the lower part of the bone, both in its producing cause, in the absence of displacement of the fragments, and, lastly, in its mode of treatment, as nothing is required for the cure but rest.

3. Fracture of the lower end of the radius is often mistaken for luxation of the carpus backwards, and the true nature of the accident is not discovered during the formation of the callus. It is then found that the carpus projects backwards, and the end of the radius forwards; that the extremity of the ulna projects towards the inner side of the fore-arm; that there is a sinking in of the radius, as if it had been cleft with a hatchet; and that the inter-osseous space, so necessary to the movements of rotation, is effaced.

4. Surgeons are very apt to commit mistakes in their diagnosis of the different fractures to which the fore-arm is liable; and yet it is most necessary for the judicious treatment of each, to have formed an accurate opinion of what accident has taken place. The most frequent fracture of the fore-arm is that of the radius alone; next that of the two bones together; and lastly, that of the ulna alone. In the treatment of fractures of the fore-arm, it is always proper to place two graduated compresses, one on the palmar and the other on the dorsal surface of the limb, and also two splints, and a roller to be passed circularly round: this bandage has the advantage of keeping the two bones apart and of maintaining the inter-osseous space.

5. A fracture of the patella is never united by a perfectly formed callus within eighty days or so. The provisional callus, which exists at the end of about thirty days in other fractures, is not sufficient here.

6. What renders the consolidation of fractures of the patella difficult, is that the fibrous tissue, which is necessary to the formation of the definitive callus, exists on the anterior surface only, and not on the posterior surface, of this bone. The neck of the thigh-bone is nearly in the same condition.

7. Whenever, after forty or fifty days of the treatment of a fracture, the callus becomes painful, we have reason to fear that it either has given way, or is about to give way, and that the limb will become deformed.

8. Hæmorrhage from the ear, accompanied with coma, almost invariably indicates a fracture of the base of the skull.

9. Dislocations of the phalanges are usually very difficult to be reduced; much more so than those of large joints. The cause of this may be, that the lateral ligaments remain entire; but *Dupuytren* was of opinion that it was attributable chiefly to the displacement of the tendons, and their escape from the grooves in which they play.

10. There is one sort of luxation of the shoulder, which is exceedingly difficult of reduction; viz. that in which the head of the humerus is directed inwards and upwards, and which is usually occasioned by a fall down a staircase. The displacement is to a considerable extent; the head of the bone touching the clavicle, and being situated above the level of the coracoid process.

Dupuytren determined by numerous experiments on the dead body that the main obstacle to the reduction is that the beak of this process is often entangled in the substance of some tendon or muscle; when such is the case, no mechanical effort can overcome the resistance without danger.

10. Various accidents may arise from falling with force upon the feet; as, for example, fracture of the heads of several of the metatarsal bones, fracture of the os calcis, rupture of the vault of the foot in consequence of the ligaments being lacerated, luxation of the astragalus, and comminuted fracture of the tarsal extremities of the tibia and fibula.

11. No disease is more difficult of cure than paralysis of the arm induced by dislocation of the humerus. The paralysis seems to arise from the stretching, compression, and perhaps also partial rupture of the nerves, which form the brachial plexus. Often no remedial means are of any avail.

12. Congenital ruptures present this peculiarity, that the seat of their strangulation is most frequently in the neck of the herniary sack, and not at the ring. *Wilmer* has made this remark; and *Alanson* also has observed, that almost all the cases, in which the stricture is situated in the neck of the sac, are cases of congenital hernia.

13. The strangulation at the orifice of the herniary sac is very common, whereas it rarely takes place at the orifice of the ring;—this opinion is not shared by all authors on the subject. (Indeed the very opposite doctrine is maintained, we believe, by many surgeons. Were *Dupuytren* right, the operation of dividing the ring without opening the sac would be almost invariably fruitless.—*Rev.*)

14. Whenever vomiting ceases during the inflammation occurring in cases of hernia, we may be almost assured that the intestine has become gangrenous.

15. There are few patients so apathetic and *insoucians* as those affected with diseases of the urinary passages. (We should not have thought that; urinary and rectal diseases have usually appeared to us to give rise to more than ordinary anxiety and depression. This is often the case in renal disease.—*Rev.*)

16. Few diseases are more difficult to cure *radically* than a very tight (*tres grande*) stricture of the urethra. For, after the canal has been widened by the prolonged use of bougies, there is always a great tendency to a relapse of the

disease. It is then that canterisation becomes useful, because we thus obtain a cicatrix moulded upon the bougie.

17. There are cases of stricture, &c. in which the keeping of an instrument in the urethra, instead of being a means of cure, becomes actually an obstacle to it: *Dupuytren* used to cite several instances of urinary fistulæ cured by the mere withdrawal of the sound.

18. All the diseases, which proceed from contraction of the urethra, are almost invariably the result of previous attacks of gonorrhœa. The size and force of the stream of urine gradually become less and less; then it escapes only in drops, and at length there is perhaps a complete retention—a state that is usually followed either by paralysis of the bladder, or by rupture of the urethra at some point, and the effusion of the urine into the cellular substance of the perineum.

19. We frequently meet with abscesses about the anus or in the perineum in phthisical patients; and it is often dangerous under such circumstances to operate, as the thoracic symptoms are very apt to increase, when the local disease is meddled with.

20. Ulcerations situated between the toes are usually very difficult to heal; this seems to be owing to the lodgment of the discharge, the admixture of the perspirable matter with it, and the constant contact of the ulcerated surfaces.

21. Of all cases of caries, the most dangerous are those in which the sternum is affected; for, when once the spongy texture of this bone becomes diseased, very troublesome fistulæ are formed, and the patient generally sinks under the effects of the disease.

22. Caries of the crest of the os ilii is a not unfrequent cause of symptomatic abscess in the lumbar and sacral regions.

23. It is a fact of almost constant occurrence, that diseases of the upper part of the thigh are felt, so to speak, at the knee, and also that those of the upper part of the humerus are felt at the elbow.

24. After amputation of the limbs, affections of the chest often supervene. Whenever we have cause to apprehend this occurrence, we should have recourse to blisters over the chest.

25. It is a curious circumstance that, in certain individuals, after lithotomy or other great operations, an abscess is apt to be formed in the calf of the leg: we cannot form any idea how this should be; but so it is.

26. In hospitals we often observe cases in which a succession of abscesses, in almost every part of the body, takes place, without any previous local or general inflammation. Such cases surely afford a proof of a purulent diathesis of the system.

27. Ambulatory or erratic erysipelas usually terminates in the formation of abscesses. These abscesses generally form without pain, and often without the patient being at all aware of their development. Such an occurrence is too frequently the image and counterpart of what is going on in some internal part; a slow inflammatory action is set up and terminates in suppuration, without either pain, fever, or any outward symptom being manifested.

28. It is a well-known fact that all abscesses caused by small-pox exist between the periosteum and the bone, with tumefaction of the latter, and subsequent formation of a sequestrum; but, in the majority of cases, this cause produces only a swelling of the bone with denudation. It is important to distinguish these two sets of cases.

29. Syphilitic exostoses do not always disappear, although their primary cause has been entirely removed.

30. The sudden extension of the fingers, when they have been long bent, (in consequence, for example, of the contraction of the cicatrised integuments after a burn,) is not unfrequently followed by gangrene. The extension should

therefore be slow and gradual; and we should avoid dividing or excising the bridle, caused by the contracted cicatrix.

31. It is not prudent to divide the frænum for phymosis during the existence of a gonorrhœal discharge, as the wound is then apt to degenerate into a troublesome ulcer.

32. In all diseases of the neck of the uterus, the posterior lip of the os tincæ is more deeply affected than the anterior one.

33. In general, in affections of the brain, the effects of purgatives on the bowels are much less powerful than usual: for example, five or six grains of tartar emetic, and several ounces of Epsom salts, will often not produce either vomiting or purging. In these cases the oleaginous purgatives, as castor oil, croton oil, &c. succeed best.

34. Hiccup, occurring in the course of diseases, is usually only a nervous complaint. Shivering is a much more dangerous symptom; it generally indicates the development of some internal mischief.

35. Patients, suffering from extensive and severe burns, have almost always a very constipated state of bowels. We should not be too anxious to remove this state, as it does not seem to give rise to any inconvenience; and, when strong purgatives are used, a most troublesome diarrhœa often ensues.

36. In the majority of cases of fatal burns, the internal surface of the stomach and of the intestinal canal is found to be highly injected. In the treatment therefore of severe injuries of this sort, the surgeon's attention should be directed to the condition of these parts.

37. Very severe burns often induce fatal tetanic symptoms.

38. Enemata with laudanum are the best means that we can employ to relieve the accidental and transitory delirium, which often accompanies surgical diseases.

39. When a cataract forms in youth, it is almost always in the membrane of the lens; whereas in old age it is the substance of the lens itself that becomes opaque.—*Journal des Connoissances Medico-Chirurgicales.*

MEMORANDA FROM M. LISFRANC'S SURGICAL CLINIQUE.

If fistulæ produce the indurations which surround them, these indurations have also the effect of keeping up the fistulæ.

In the treatment of an old callous ulcer of the leg, you will find great difficulty in effecting a cure, until you bring into a healthy condition the surrounding indurated tissues; a fistula, accompanied with such a state of parts, is still more difficult to manage.

One of our patients had a number of deep fistulæ on his left thigh, which was indurated and nearly double of its usual size; every attempt at effecting a cure had failed; and one surgeon had even proposed amputation at the hip-joint. I directed my attention to the removal of the existing engorgement; the inflammatory element was present there; I therefore employed local bleedings and emollient poultices; and, when the inflammation was dissipated, the ioduret of lead ointment was applied. Under this mode of treatment, several of the fistulæ healed up. Compression, which had formerly failed, was now resorted to with such excellent effects, that in the course of three months the patient was entirely cured. I could easily adduce a great number of other similar cases to demonstrate the utility of the principles which I have so often explained—get rid first of the local inflammation, before you use any means to induce cicatrization. If a fistula remains after all the inflammatory symptoms are removed, it is then time to direct special treatment to it; and this will always be much more certain and easy, when the ground, so to speak, is well prepared.

The inflammation induced by an incision of the tissues over any swelling is often followed by a resolution of the morbid state.

I have long since proved to the surgeon that he may with perfect safety make flaps with lardaceous tissues, provided they are neither scirrhus nor softened, and that the inflammation, which attacks them, is often sufficient to bring them into a normal condition—sometimes in the course of a few days. I had read in the writings of *Ambrose Paré* that that great surgeon was in the habit of treating the callosities of ulcers by scarifying them freely: and it occurred to me that this excellent precept, hitherto far too much neglected, was capable of considerable extension.

I will tell you a case which occurred to me some years ago. I had nearly dissected out a tumor, when the patient resolutely refused to permit the operation to be completed: I was therefore obliged to leave the tumor in its place, and lay the flaps of the wound down. In a few days the man left Paris, and I lost sight of him. Six months afterwards, he met me; there was no longer any tumor visible, although nothing had been done, since he left the hospital.

You know that ordinary hydro-sarcocele is as readily cured by puncture and injection as simple hydrocele. A patient was admitted with a transparent hydrocele, which was punctured; but no fluid escaped. I therefore incised the tumor: the contents of the sac were of a gelatinous consistence, and were contained in numerous small cells; the testicle was much enlarged and extremely hard, but smooth:—should it be removed?—I thought not. In the evening I visited my patient; a very violent inflammation had already set in; forty leeches were therefore applied above the wound, and when they ceased bleeding, poultices were applied. Next day, the inflammation was much abated; thirty more leeches were ordered. In the course of a day or two, the swelling of the testicle began to diminish; the subsidence gradually continued for several weeks, until at length the organ resumed its healthy size: the wound healed, and the patient was cured.

Encysted serous tumor in the neck; extirpation after being laid open by incision.

The tumor extended from the mastoid process four inches down the neck, and was situated over the course of the large blood-vessels. I first opened the cyst along its entire length, and then proceeded to dissect it from its adhesions: it was thick, hard, and very resisting. Now when the parietes of an encysted tumor are so,—a circumstance which is readily ascertained when it is fairly exposed—I advise you, contrary indeed to the instructions in surgical books, to lay it freely open, before extirpating it. You will find this easier than if you attempt to dissect it out entire. A well known fact may teach you the truth of this:—cannot you dissect the peritoneum from off the abdominal muscles with greater ease when the abdominal cavity is laid open, than when it is entire? As I proceeded in the extirpation of the cyst, I found that it very firmly adhered posteriorly to the large blood-vessels of the neck. What was to be done? If left in the wound, the probability was that a troublesome fistula might supervene. I therefore ordered my assistant to seize hold of it firmly and draw it out, while I divided fibre by fibre with the greatest caution. Success followed the attempt; it was extracted entire; and ultimately the wound was healed in the course of a fortnight.—*Bulletin de Therapeutique.*

ON THE HISTORY OF THE NEW OPERATION FOR THE CURE OF SQUINTING.

Although it is admitted by all, that Professor *Dieffenbach* of Berlin has unquestionably the merit of having first actually performed the operation of dividing

the internal rectus muscle of the eye for the cure of squinting, it would seem that several surgeons had previously suggested and even recommended it. The following observations are communicated by M. *Carron du Villards* in a recent Number of the *Bulletin de Therapeutique*.

With a natural partiality for *soi-meme*, which we suppose is common to all authors, he commences by alluding to a memoir, entitled "Practical Considerations on Sanguineous Effusions into the Eye and its Appendages," and published by him in the *Gazette Medicale* for 1838. In it he has reported the case of a gentleman, who, in consequence of a gun-shot wound of the eye by which one of its oblique muscles was divided, was cured of a squint which had existed for many years.

"Here," says he, "as in the case of the operation for excision of the lower jaw, a gun-shot wound had opened a new path to operative surgery. Without doubt if, at this period, I had made public some facts which I then communicated to M. *Scoutetten*, head surgeon of the military hospital at Metz, I should have reconciled the inventors of the new operation (*j'aurais mis les inventeurs d'accord*)."

In the *Annales d'Oculiste* for June (1838, we suppose) we meet with the following sentence: "It is now some time since an Italian physician suggested that squinting, attributable to the spasmodic contraction of one of the straight muscles of the eye-ball, might probably be cured by the division of the contracted muscle." M. *Cunier*, the Editor of the *Annales*, received this suggestion in 1837, at Montpellier from Dr. *Baschieri*, who wished him at that time to perform the operation on a relative of his own: but here the affair dropped.

M. *Jules Guerin* also, in the same year also, 1838, seems to have performed several experiments in the presence of M. *Seutin* and others: "he fell however, adds M. *Carron*, "into an error very common among scientific men; to wit, that of *thinking aloud*, before having taken the necessary steps to secure his property to himself." (Is this remark intended as a reproach against M. *Seutin* for *malhonnêteté*?)

In 1838, M. *Stromeyer* of Hanover, published the following remarks in his work on the cure of deformities.

"Various trials on the dead body lead me to recommend the following operation for the cure of squinting. Let the sound eye be closed, and the affected one be directed as much as possible outwards. Lay hold of the conjunctiva with forceps, and divide it at the inner canthus with a cataract knife. If the eye be drawn sufficiently outwards, the tendon of the internal rectus will be seen; a probe may then be passed under it, and with a pair of curved scissors it may be divided across without difficulty. The sound eye should be kept closed for some time, to enable its fellow, on which the operation has been performed, to recover its normal movements.

Orthopædic surgery shews that it is sufficient to divide a muscle to remove any spasmodic contraction with which it may be affected, and to enable it to resume its healthy functions; and, as to the operation which we recommend, it cannot be attended with more danger than follows the extirpation of an encysted tumor of the eye-ball."

When *Dieffenbach* first made known the results of his operation, M. *Guerin*, to whom we have already alluded, addressed to the Academy of Medicine at Paris a letter, in which he stated that for a length of time he had publicly professed his conviction that squinting was owing to a retraction of one or more of the muscles of the eye, and had distinctly announced his intentions of extending the same principle of treatment which he had for many years applied for the removal of deformities in other parts of the body. So convinced was he of the justness of his views that, to one of the most distinguished members of the academy, he had said that *squinting is the club-foot of the eye*. M. *Guerin* admits that one of the causes which had induced him to defer putting his designs into

practice, was the fear of inflammation supervening in an organ, so near to the brain as the eye is.

As an historical document, the following extract from a letter published in the *Annales d'Oculiste* deserves to be given. "Four years ago, M. *Gensoul*, ex-surgeon in chief of the Hôtel Dieu at Lyons, suggested the practice of ocular myotomy in a case of squinting; this point in surgery occupied his attention for a long time. The proposal was no secret; it was known to all the pupils of the hospital. I have myself seen M. *Gensoul* perform the operation several times on the dead body, and have heard him frequently allude to the subject. In the course of the year 1838, M. *Gensoul* visited Germany, and conversed with the surgeons of Berlin, and with M. *Dieffenbach* among the rest, on the subject, of myotomy for the cure of squinting."

But passing from the history of the operation to that of its success, it would seem that it has been much more fortunate in some countries than in others. *Dieffenbach* tells us that he has succeeded in every case; and M. *Van Roosbroeck* of ———, in Belgium, boasts of having operated on 180 persons with complete success. In France, we must confess that we have been much less fortunate; we have given a fair trial to it, says M. *Carron du Villards*; but hitherto no surgeon of good faith will pronounce the operation to be "un moyen curatif constant." M. *Roux* has failed in every case that he has tried it; M. *Velpeau* has succeeded only in two out of seven cases; M. *Guerin* himself in one out of four; and of five cases in which I (M. *Carron*) have operated, one only proved quite successful, another partially so, and in the other three no benefit whatever was obtained.

The dexterity of our surgeons will not be questioned by any one; and we should therefore very much like to be furnished with a key to the extraordinary success of M. *Van Roosbroeck*, and some other foreign surgeons. It has always appeared to us to be a heresy in surgery to apply a single and exclusive practice to the treatment of a disease of which there are numerous and different forms. Certainly, if squinting was invariably owing to the spasmodic contraction of one or more of the muscles of the eye, the division of the affected muscle or muscles might be followed with success in the majority of cases. But unfortunately such is not so, and the deformity is often attributable to conditions in which such an operation is utterly inapplicable. The opinion of M. *Venier* seems to us to be quite correct—that the only form of squinting, which we can reasonably hope to remove by the operation, is that which is permanent, and is caused by the excess of action or the deficiency in the length of the muscle, in the direction of which the deviation is present.

But whether this be correct or not, every one will surely admit that we must have more time and a larger experience before we can solve many questions relative to the operative treatment of squinting—questions which have been entirely overlooked in the recent competition among surgeons who should be the first to operate. M. *Carron* closes his remarks by alluding to a very interesting case which occurred some years ago in the practice of M. *Lisfranc*. This celebrated operator found it necessary to dissect deeply into the orbit at the inner canthus for the purpose of extirpating a cancerous tumor imbedded there; the rectus muscle was divided, and the effect of this was that the eye-ball was immediately drawn outwards. When, however, the wound was healed, the divided muscle seems to have re-united; for the eye recovered its normal axis.—*Bulletin de Therapeutique* for August 1840.

Remarks.—Some of the preceding observations are well deserving the attention of medical men: they may possibly check the somewhat vehement readiness, which has prevailed in this country during the last twelve months, to operate in every case of squinting indiscriminately: it has been quite a *furor*. We should like now to see a faithful table of the results of a considerable number of the

operations performed six months ago. In how many of the deformity been permanent?—*Rev.*

the cure

OBSERVATIONS ON SQUINTING, AND THE NEW OPERATION FOR ITS RELIEF.

We find, as might have been expected, a number of communications on this, at present, popular subject in the French Journals; but certainly there does not appear to be the same unanimity as to the advantages of the new operation for the relief of the infirmity among their writers, as prevails among the numerous correspondents on the subject in the English periodicals. We rather fear that our countrymen have been somewhat premature in their announcements of the almost uniform success which has attended the division of the internal rectus muscles in the many hundred cases which have already been reported. Have the cures been really permanent? That is the important question; for it may readily be supposed that the eye may recover at the moment, and for some time after the operation, a straight direction; but that the former obliquity may return when the cicatrisation has been completely effected. This question has been examined with considerable ability by M. *Sedillot*, in a paper published in the 109th number of the *Gazette des Hôpitaux*.

..... "Under the general term of squinting," says he, "there are various forms of deviations of the eyeball described. Thus the eye may be drawn inwards (*strabismus convergens*,) or outwards, (*divergens*,) or upwards, (*sursum vergens*,) or the axis of one eye may be directed upwards and that of the other downwards, (*s. horrendus*.)

All these varieties of squinting may be either permanent or momentary, and also either congenital or acquired. The same eye has been observed to squint in one direction for some time, and subsequently to squint in the opposite direction. In the majority of cases, the affected eye resumes its rectitude whenever the sound one is closed; but occasionally this is not the case, and the squint remains permanent under all circumstances. The sight of the distorted eye is usually more weak than that of its fellow. Now it is important to keep in mind these several circumstances in considering the new operation which has attracted so much attention of late for the cure of this infirmity."

It was the opinion of *Buffon* that squinting was the effect of an inequality in the visual powers of the two eyes, and that any attempts to remedy the evil must be based on the re-establishment of a perfect equality.

The person, he said, to avoid seeing objects double—which will necessarily be the case if he looks at them with both eyes, the axes of which diverge—gets into the habit of looking at them steadfastly with one eye only, and tries to turn the other one away. If this be persisted in, a confirmed squint will probably be the result. During the progress of amaurosis some patients begin to squint, in consequence of the confusion of the sight arising from the unequal powers of the two eyes.

"But we must not attach too much importance," says M. *Sedillot*, "to these observations; for nothing is more common than to meet with persons, whose eyes are so different that they require one of the glasses of their spectacles to be convex and the other to be concave; and yet these persons do not squint when they lay their spectacles aside. Again, how often does it happen that a person becomes almost completely amaurotic in one eye, without having been at all aware of any gradual decay of its vision. We may, therefore, fairly conclude, that squinting is not owing solely to an inequality in the visual powers of the two eyes, but depends, in a great number of cases at least, on some other cause. May we not suppose that the feebleness of the distorted eye

... a defect of action, and that, as soon as the organ is no longer withdrawn from the visual rays, it will gradually recover its normal functions?"

M. *Sedillot* proceeds to offer some comments on the operation of dividing one or more of the muscles of the eyeball for the relief of the infirmity in question.

It has, with considerable shew of reasoning, been argued that, unless the muscles be permanently contracted, so that the squint continues when the sound eye is closed, no good can be expected from their mere division. What advantage, it has been said, can result from lengthening a muscle which has already its normal length?

But we must not, says M. *Sedillot*, allow ourselves to be too much influenced by this objection, although we admit that it has considerable force. It requires but the least degree of predominance of action in one muscle over another to draw the organ to one side; and, although the contraction be altogether of a nervous or spasmodic nature, and be not at all connected with any structural change of the contracted muscle, yet if continued for a length of time, the external muscle, by being kept in a state of forced extension, will gradually lose its energy, and becomes at length unable to resist, by any voluntary action, its antagonist and the obstacles to its movements, which will be established in the surrounding parts.

"Were we," says M. *Sedillot*, "to name the cases in which theory points out the best chances of success, we should certainly regard the permanent squint, unaccompanied however with any inequality in the vision, as the most favourable condition for performing the operation; than the ordinary squint, in which the affected eye recovers its straightness when its fellow is closed; and last of all, that form in which the visual powers of the affected eye are more or less altered."

There cannot be a doubt but that many of the alleged cures from the performance of the operation have been prematurely reported; in not a few the squinting has returned within a longer or shorter time afterwards. M. *Gueria* himself, so zealous an advocate of the operation, acknowledges that the section of the internal rectus muscle alone is often not sufficient for the removal of the deformity, and that it is necessary to divide, at the same time, the oblique muscles, which are, it is known, in part adductors of the eyeball, and which, therefore, will sometimes keep it drawn inwards, even after the internal rectus has been divided.

It is certainly rather surprising that *Dieffenbach*, of Berlin, the first who performed the operation, and also M. *Phillips*, of Liege, both of whom have operated in a vast number of cases with an almost uniformly perfect success, according to their own reports, have not made any allusion to the necessity of ever dividing the oblique muscles. Other surgeons have been far less fortunate; indeed, MM. *Roux* and *Velpeau*, high authorities in operative surgery, seem to have met with so little success in their practice, that they do not hesitate to question the accuracy of many of the reports which have been given to the public. I myself, says M. *Sedillot*, know of a considerable number of cases, in which the operation has failed of curing the squint, and I have heard M. *Gueria* state, in his clinical conferences, that the section of the internal rectus muscle alone is not, in every case, sufficient to rectify the deformity, and that it is then necessary to divide one or both of the oblique muscles, which are, as already stated, in part adductors of the eyeball. If such be the case, the operation is far from being always so simple as many of its advocates have represented; and we cannot but feel surprised that *Dieffenbach* and *Phillips* should not have alluded to this circumstance.

Perhaps the following remarks, from the second memoir communicated by the former of these surgeons to the Royal Academy of Medicine, may be acceptable to the reader.

1. In persons who squint with one eye only, and this inwardly, the pupil is very often observed to be dilated, while that of the sound eye is considerably contracted. When this is the case, vision with the two eyes is double; and sometimes it is also double in the distorted eye itself.

2. When the internal rectus muscle is divided, the pupil becomes contracted; and should the contraction be equal to that of the pupil of the other eye, the vision is regular. But, on the contrary, if the two pupils are unequally contracted, the vision remains or it becomes double; this state being observed for the first two or three weeks after the operation, and afterwards gradually ceasing.

3. The tendon of the superior oblique muscle having been divided in several cases, where the eye was drawn upwards and inwards, the eyeball was observed to fall and become placed in the middle of the opening of the eyelids.

4. When the squint is divergent or outwards, the section of the external rectus muscle is sufficient usually to remove the deformity; but it not unfrequently happens that the eyeball becomes drawn inwards, and then it is necessary to divide the internal muscle also before its straight direction is completely restored.

5. In cases of squinting upwards, the superior rectus muscle has been divided; but this operation is of much more difficult execution.—*Gazette des Hôpitaux*.

CONSIDERATIONS ON THE RADICAL CURE OF HERNIÆ.

For several years past, the attention of surgeons has been directed to discover a safe and effectual method of obtaining a radical cure of reducible herniæ. It is almost unnecessary to state that all the proposals to effect this most desirable object by the mere external application of astringents and such like remedies have proved on trial quite nugatory, and that one or two of the operations which have been suggested are not without considerable danger. Castration has been more than once performed by educated surgeons as well as by several noted charlatans; but surely, apart from the circumstance of this operation not always proving successful, few patients will submit to such a mutilation. The cauterisation of the coverings of the sac, either with the hot iron or with strong chemical escharotics, has been repeatedly tried; but there are very strong objections to this method; for not only has it caused death in some instances, and the loss of the testicle in others, but it has also completely failed in other instances in preventing the subsequent descent of the hernia. The same remarks are applicable to the proposals, which have been made at different times, to use ligatures or sutures in various ways to the tumor. Then the method by incision, as in the operation for strangulated hernia, found several advocates, when M. *Petit* had the misfortune to find that it is sometimes followed with fatal consequences, independently of its being ineffectual. By associating with the incision the dissection and excision of the sac, the operation was rendered considerably more dangerous and not much more sure. There were certainly greater chances of success by the plan proposed by some surgeons, to fix in the inguinal canal, in the form of a plug, either a portion of the sac previously dissected, or a portion of the omentum, or the testicle itself; but, besides that the dissection of the sac is a tedious and painful operation, and one not altogether free of danger; besides that the testicle brought up to the ring is not easily secured in its place there and might become the seat of intense suffering; besides that the omentum, if artificially fixed, would certainly in most cases give rise to severe pains and probably enteric disease, we know that even after such operations we cannot count upon a radical cure of the hernia. Still prosecuting their ré-

searches, other surgeons proposed to cauterise or scarify the inner surface of the sac in the canal; but, as for this purpose all the envelopes of the sac must be previously exposed and divided, it is scarcely necessary to say that such proceedings must be accompanied with no inconsiderable danger.

Things were in this state twelve or fifteen years ago, when, in spite of the anathemas of *Sabatier*, *Dessault* and *Boyer* against all attempts to effect a radical cure of hernia by means of operation, several surgeons again began to make some experiments on this subject. Permanent compression, kept up for several months successively, was again fairly tried, and several cases were published in which a cure seemed to be, and probably was, effected by the adoption of this means along with the local application of astringent washes and confinement to the horizontal posture. But this plan is too tedious and troublesome ever to be generally used.

A distinguished surgeon of Paris, *M. Belmas*, devised a plan to obliterate the herniary sac without leaving any wound in the integuments. He proposed to introduce, by means of a canula in form of a trocar, a small portion of gold-beater's skin into the serous tunic of the hernia, which was to be left there so as to excite an exudation of plastic lymph, and thus cause the *trajet* of the hernia to be firmly plugged up. Although a few cures have been effected by this mode of procedure, *M. Belmas* has more recently substituted for the gold-beater's skin, which he used in his first experiments, minute filaments of animal matter, which he inserts and deposits in the root of the herniary sac by means of a small larding-pin (*lardoir*).

Mr. Jameson, an American surgeon, has reported a case in which he effected a cure in the following manner. The herniary envelopes being divided, as in the operation for strangulated bowel, he cut a portion of the integuments in the form of the blade of a lancet, and folded it back upon itself, securing it in the ring so as to plug up its *trajet*. We are not aware that this plan has ever been tried in France; it may indeed succeed, but it cannot be altogether free from danger.

M. Gerdy has proposed another method, which is certainly more safe, but is unfortunately much more uncertain. It consists in pushing up along the inguinal canal a fold of the integuments of the scrotum, in the form of the finger of a glove, and then securing this fold in its new situation by transfixing it with a strong thread by means of a needle contrived for the purpose. This operation has now been performed a good many times; but not only has it failed in several instances, but it has even been followed by fatal consequences in more than one case.

As to the proposal of *M. Bonnet* of Lyons to transfix the sac with several needles to be left in for some days, and that of *M. Mayor* to substitute strong threads, like a seton, in place of the needles, *M. Velpeau* is of opinion, that in neither of these ways can we hope to effect more than a partial closure of the sac, and therefore that we cannot count upon a radical cure of the hernia.

In 1836, *M. Velpeau* tried the effect of iodine injections into the sac of a reducible hernia, and repeated the experiment on other two patients; but the difficulty of reaching the sac with certainty, and the unsatisfactory results obtained in these three cases, are serious objections to the practice; and *M. Velpeau* himself, in the last edition (1839) of his work, alludes to it without approbation.

During the course of last year, he tried another method in two cases. This consisted of three acts or elements: a subcutaneous incision on the principles so ably insisted upon by *M. Guerin* in the surgical treatment of so many diseases, scarification of the interior of the sac and especially of its internal aperture, and lastly, compression of the entire length of the inguinal canal. The left forefinger being first pushed into the external inguinal aperture to the depth of half an inch or so, a bistoury is slid along the nail and inserted through the in-

téguments in a direction backwards and outwards; the finger is then withdrawn and the cutting edge of the instrument turned against the iliac parietes of the abdomen, and in such a manner as to make numerous scarifications in various directions, without endangering the epigastric artery: the bistoury is then withdrawn by the small entrance-wound, and the operation is completed.

In two cases *M. Velpeau* has succeeded in effecting what he has reason to believe will prove a radical cure of the hernia by adopting this practice; but further experience alone can determine whether it will be generally useful.—*Bulletin de Therapeutique.*

A NEW METHOD OF INDUCING ARTIFICIAL LABOUR.

Dr. Meissner of Leipsic, whose practice has been immense for the last 20 years, objects to the plans which have hitherto been in use for the purpose of inducing premature labour, on the grounds of their insufficiency in some cases, and of their troublesome and even dangerous effects in others. The puncture of the membranes, by giving a premature discharge to the waters, is often followed by the death of the child; the internal use of the ergot of rye in large doses also exerts a hurtful influence on the life of the fœtus; while the insertion of pieces of sponge, gradually enlarged in size, into the cervix of the uterus, is at best a very tedious process, and not unfrequently causes a troublesome irritation of the uterus.

The plan, which *M. Meissner* has adopted with uniform success, as well for the infant as for the mother, is the following: he punctures the membranes high up above the cervix uteri. For this purpose he uses a long curved canula which is provided with a blunt round-pointed trocar; this is cautiously introduced, the convexity turned backwards or to the concavity of the sacrum, along the forefinger of the left hand,—the patient standing and the accoucheur kneeling before her—up to the posterior part of the cervix; it is then to be passed slowly and gradually into the uterus between its parietes and the membranes of the ovum, without separating these too much from their loose attachment. When the extremity of the canula has reached to about O. 271 of a *metre* (seven or eight inches?) above the cervix, the blunt-pointed canula is to be withdrawn and a sharp-pointed one is to be introduced. Before pushing it on, the operator should endeavour to ascertain by tact whether the point of the instrument is resting on a solid or on a yielding elastic body: if on the former, it will most probably be some part of the fœtus; and then the point of the canula should be gently displaced, before the trocar is made to penetrate the membranes. The trocar is then to be withdrawn from the canula, and, when about a tablespoonful or so of the liquor amnii has escaped, it may be withdrawn also. An occasional oozing continues from the vagina, and, usually in from 24 to 48 hours after the operation, the uterine contractions come on and expel the child.

The following cases are adduced.

Case 1.—A rachitic woman had been twice delivered of a child by means of the perforator and crotchet. On her third pregnancy, *Dr. Meissner* resolved to induce premature labour,* according to the plan which we have now described. This was done at ten o'clock one morning, and next day at four in the afternoon labour-pains set in, and the child was delivered by nine in the evening. In consequence of the mother not being able to suckle the infant, it died a few weeks afterwards.

* The author never induces artificial labour before the thirty-sixth week of pregnancy.

(This is the only case in Dr. *Meissner's* practice where the child has died; he very properly remarks that children born before the full period invariably require to be suckled. To bring them up in any other way always fails.)

Case 2.—A lady, 29 years of age, and decidedly rickety, had been on three successive occasions delivered by means of embryotomy. In the 36th week of her fourth pregnancy, Dr. M. perforated the membranes high up, as recommended above: a large quantity of the waters flowed out. Four and thirty hours after the operation, the pains of labour came on; when the os uteri was well dilated, the coccyx was found to be presenting. After the lapse of another hour, the feet were extracted; the head being detained at the inlet of the pelvis, it was necessary to apply the forceps. The child was however born alive, and, being suckled by the mother, became a healthy infant.

Case 3.—The same woman became again pregnant on the following year. On the 15th November, in the 36th week of gestation, Dr. *Meissner* punctured the membranes very high up; during the night a quantity of water escaped; but labour-pains did not come on till fifty-eight hours after the operation. These continued for five hours; and then the child was delivered without artificial assistance. It at once took to the breast, and subsequently thrived quite well.*

In the following case, the operation was performed under peculiar circumstances; it was not because there was any contraction of the usual size of the pelvis, but in consequence of the mother labouring under a severe attack of an acute disease—a new indication for inducing premature delivery by artificial means.

Case 4.—A woman, who had borne several living children, was again pregnant in 1838. When near the end of the eighth month of gestation, on the 23rd of May, she fell down stairs, and received a severe wound on the sacrum. A violent attack of inflammation of the kidneys ensued. She was bled from the arm, and a number of leeches applied to the loins, and took frequently-repeated doses of calomel.

On the 26th there was still great tenderness of the abdomen, accompanied with distress of breathing, and vomiting of whatever she swallowed: she was again bled.

Next day, the symptoms continued unrelieved. Dr. *Meissner*, unwilling to push the use of antiphlogistic remedies further in consequence of the pregnancy, determined to induce delivery, as he hoped that, by the distention being removed, and by the subsequent discharge of blood from the uterus, the abdominal symptoms might be greatly relieved. On the 28th, therefore, he punctured the membranes in his usual manner: in five or six hours afterwards labour-pains commenced, and rapidly became more and more violent until

* This woman again became pregnant, and Dr. M. once more induced premature labour. This time he experienced considerable difficulty, in consequence of not being able to detect with the point of the canula any elastic and yielding point of the membranes, where he could push in the trocar. At length he felt what he considered to be a safe point and made a puncture. No water, however, flowed out at first; but during the subsequent night a small quantity escaped. Labour came on eighteen hours afterwards; but, in consequence of the head being long detained, the forceps was applied, and delivery was safely effected, without any danger to either mother or child. The difficulty in the present instance was, in all probability, owing to the small quantity of the liquor amnii that existed.

delivery of a healthy child was effected. The patient soon found herself much relieved in every respect, except in the distress of breathing. A few doses, however, of opium and ipecacuan speedily set her all comfortable. She rapidly recovered, and was able to suckle the child: both ultimately did quite well.

Several other cases are reported in Dr. *Meissner's* memoir; but it is unnecessary to particularise any but one, in which the woman, in consequence of great deformity of the pelvis, had been already four times delivered by means of embryotomy. In her fifth pregnancy, Dr. M. resolved to induce artificial labour in the 36th week of parturition. He experienced more than usual difficulty in introducing the canula in consequence of the deformed shape of the abdomen and pelvis; the os uteri being not easily discovered per vaginam. At length it was passed up between the walls of the uterus and the membranes; but it was not possible to puncture these (the membranes) in the usual place, posteriorly, in consequence of there not being sufficient space near the vulva to press the handle of the instrument far enough back towards the sacrum. The operator was therefore obliged to seek for a point on the left side: he succeeded after a good deal of difficulty. Fourteen hours afterwards, pains commenced; but as the labour proved very tedious, the forceps was applied, and a living child was extracted.

The preceding facts cannot fail to attract the notice of all obstetricians; and we shall therefore wait to learn the results of the practice, now recommended, in the hands of different physicians. The success of Dr. *Meissner* is a sufficient evidence of the safety of the operation, when skilfully and cautiously performed. It is based on sound physiological principles: and, if once fairly established in practice, will redound much to the credit of the inventor. We may again repeat, that Dr. *Meissner* never performs it till the 36th week of gestation; that he recommends that the woman should be standing up during the operation; that he does not allow more than a spoonful or so to flow out from the canula; and that he does not employ any other means to induce the contractions of the uterus.

We are informed that another physician of Leipsic, Dr. *Guntz*, has already performed the operation several times, and met with the same success that has attended the practice of Dr. *Meissner*.—*Medicinishe Annalen, et Gazette Medicale. Ferrier*, 1841.

RESULTS OF RE-VACCINATION IN THE DEAF AND DUMB INSTITUTION OF PARIS.

The number re-vaccinated was 128—124 pupils, whose ages varied from ten to eighteen years, and four adults, servants of the institution. Of the entire number, 60 were males and 68 were females. The operation was performed from arm to arm; the vaccine lymph was abundant; and the number of punctures made in each arm varied from two to six.

In 25 of the individuals, there neither were any traces of previous vaccination on their arms, although they had no doubt been vaccinated in infancy, nor were there any marks of small-pox on their face or body. (The mere absence, however, of cicatrices cannot be taken as a proof that the parties had never been vaccinated, nor had passed through variola.) Of these 25 cases, the vaccination produced no vesicles in 18; imperfect or false vesicles in four; and genuine cow-pox vesicles in three only.

Of seven individuals, who had distinct marks of small-pox on their faces,

limbs and bodies, the operation succeeded perfectly in two, and failed altogether in five of them.

In the remaining 94 cases, there were distinct cicatrices of a former vaccination, the number of these varying from one to four or six ; in some, one or more cicatrices were observed on each arm, in others on one arm only.

Now of these 94 persons, ten exhibited distinct cow-pox vesicles (after the re-vaccination,) 16 imperfect or bastard vesicles, and, in the remaining 70, the operation failed in producing any effects.

If we take, therefore, the entire number of persons "all well re-vaccinated by me," says M. *Ménière*, the reporter, "we find that in 15 cases only out of the 128, regular cow-pox vesicles were formed over the punctures on the arms ; in 20 the vesicles were imperfect or bastard ; and in 93 none at all were developed. From these data it appears that the operation took effect in about *one-eighth* of the whole ; in about the same proportion, *one-eighth*, in those who had never had small-pox, and who exhibited no traces of vaccine cicatrices on their arms, although they had been vaccinated at some former period of life ; in *one-third* of those who had had small-pox in their youth ; and in about *one-tenth* of those in whom the cicatrices of a former vaccination were still distinct."

In estimating these results, it may be proper to attend to certain circumstances connected with the cases.

Of the fifteen persons in whom the re-vaccination took complete effect, ten were under thirteen years of age, and the other five were a few years older. In the two young girls, in whom it succeeded after previous small-pox, (which had left numerous and most distinct traces on the face and elsewhere) five years had elapsed in one case, and seven in the other, since the date of the attack. Among the pupils who had been vaccinated in their infancy, and in whom the re-vaccination took complete effect, two were twelve years, and the third was fourteen years old.

From these data, we may infer that the preservative or counteracting power of small-pox does not exceed that of cow-pox ; since, under very similar circumstances, those who had passed through the two diseases were submitted to the same contagious influence and experienced nearly the same results.

But we are unwilling to draw any general conclusions from the preceding report ; as we are well aware that experiments must be made on a much more extensive scale before we can safely do so.

In conclusion, we may state, that several infants were vaccinated for the first time from the vesicles on the arms of those in whom the second operation took effect, and that the virus thus obtained seemed to be perfectly genuine and active.—*Journal des Connoiss. Med. Chirurg. Septembre.*

FRENCH OFFICIAL DOCUMENT ON RE-VACCINATION.

M. *Villeneuve*, the reporter of the Commission appointed by the Royal Academy of Medicine to examine the various reports sent from forty-one departments of France by order of the Government, has published the following Table of the general results of the vaccinations and re-vaccinations performed, and of the number and issue of the cases of small-pox in those who had been vaccinated.

DEPARTMENTS.	Vaccinations.			Re-vaccinations after ascertained Vaccination.			Smallpox after ascertained Vaccination.	
	Number.	Successful.	Unsuccessful.	Number.	Successful.	Unsuccessful.	Number.	Deaths.
Aisne	292	257	35	72	12	60	13	
Alpes, (Basses) .....	..	..	..	9	2	7		
Ardeche .....	..	..	..	..	..	..	1	
Ardennes .....	..	..	..	1	..	1		
Ariege .....	..	..	..	43	1	42		
Aveyron .....	..	..	..	110	10	100		
Calvados	223	212	11	2	..	2		
Charente .....	..	..	..	3	1	2		
Charente-Inferieure .....	..	..	..	12	7	5	3	
Corse .....	..	..	..	..	..	..	14	
Dordogne .....	..	..	..	400	..	400		
Eure .....	..	..	..	8	2	6		
Gers .....	..	..	..	66	4	62		
Herault	124	113	11	10	2	8	61	3
Ile-et-Vilaine	1,473	1,392	81					
Indre .....	..	..	..	361	2	359	1	
Indre-et-Loire .....	..	..	..	54	13	41		
Jura .....	..	..	..	2	1	1		
Landes	176	166	10					
Loir-et-Cher .....	..	..	..	16	1	15	7	
Loire (Haute) .....	..	..	..	..	..	..	3	
Loiret	131	116	15					
Lot-et-Garonne .....	..	..	..	..	..	..	1	
Manche .....	..	..	..	88	22	66	14	
Marne (Haute) .....	..	..	..	..	..	..	1	
Meurthe .....	..	..	..	33	1	32		
Nord	23,596	23,324	272					
Pas-de-Calais	53	51	2	41	6	35	20	
Puy-de-Dome	1,258	1,241	17	188	83	105	23	
Pyrenées (Basses) ..	..	..	..	101	6	95		
Pyrenées-Orientales ..	517	508	9	364	..	364		
Saone (Haute) .....	..	..	..	..	..	..	1	
Sarthe .....	..	..	..	..	..	..	3	
Seine-Inferieure .....	..	..	..	..	..	..	1	1
Seine-et-Marne	60	59	1	..	..	..	20	
Sevres (Deux)	528	505	23					
Tarn	583	579	4	71	5	66	9	1
Tarn-et-Garonne ...	1,399	1,330	69	141	39	102	146	
Var .....	..	..	..	2	2	..	20	
Vaucluse .....	..	..	..	..	..	..	3	
Vendée .....	..	..	..	1	1	..		
Total	30,413	29,853	560	2,199	223	1,976	365	8

Remark.—It is to be noticed—1, that the above table contains only the results of those reports in which the vaccinators have recorded their unsuccessful as well as their successful cases; and, 2, that wherever the re-vaccinations have been described in the reports as doubtful, they have been omitted.

It results from this table,—

1. That the proportion of cases in which vaccination failed, compared with that in which it took effect—estimated by some writers as one to eight, or one to ten—is not more than about one to fifty-four.

2. That of 2,199 cases, in which re-vaccination was performed on persons of different ages and sexes who had been successfully vaccinated at some previous period of their lives, the operation took effect in 223 cases only—which would give the proportion of about one to thirteen or fourteen.

3. That of 365 cases of confirmed small-pox, occurring in persons, who had been at some previous period successfully vaccinated, there were only eight that proved fatal—giving a proportion of about one in forty-five or forty-six.

We know that sporadic small-pox usually carries off about an eighth or a tenth of those who are affected with it; and that, when the disease becomes epidemic, the mortality is often as high as one in four, and sometimes even higher.

M. *Villeneuve*, in submitting the above table as containing the results of the labours of the Commission, admits that the data hitherto supplied are far from being sufficient to solve the question submitted by the Government to the Royal Academy—whether it is necessary to have recourse to re-vaccination as a universal measure throughout France.—*Annales d'Hygiène et de Med. Legale*.

Remarks.—The professional public is certainly indebted to M. *Villeneuve* for the preceding statistical table; for, although it is imperfect in several respects, it gives us the opportunity of learning the gratifying intelligence that vaccination has proved in France, as it has in every other country into which it has been introduced, one of the very greatest blessings ever bestowed by one man on his fellow-creatures. If the report told us nothing else but that small-pox after previous vaccination proved fatal in *eight* cases only out of *three hundred and sixty-five*, it would be valuable for this announcement alone.

We anxiously wait for a further and more ample account of the researches of the French Commission, appointed by the Minister of the Interior to examine the state of vaccination in France, and the various questions connected with it.

We avail ourselves of this opportunity of strongly recommending all medical men to use *fresh* and *fluid* lymph,—directly from the vesicle if possible,—when-ever they practise re-vaccination. We are quite convinced that the failure is a large number of cases, where the operation takes no effect, is attributable to *dried* lymph having been used.—*Rev.*

SKETCH OF THE PROGRESS OF MEDICINE IN FRANCE DURING 1840.

It is a useful practice, adopted by the *Gazette Medicale*, to recapitulate at the commencement of a new year the leading events in medical knowledge, which have been recorded during the course of the preceding one. M. *Guerin* has with this view published three somewhat lengthy papers in the January number of his journal; and although most of the notices are very brief, and quite insufficient to convey an accurate idea of the memoirs, which they profess to give an account of, yet the mere mention of many of them will often be found useful, by refreshing the memory, and by suggesting a train of thought to the mind of the reader himself. Unfortunately we have not left ourselves sufficient room to give more than an abstract of part of M. *Guerin's* first paper, and shall therefore be obliged to defer any notice of the other two papers till our next quarter.

M. *Guerin* commences with anatomy and physiology.

M. *Lallemand*, the distinguished professor of Montpellier, has endeavoured to shew that fecundation is not an act, in which an inert body is suddenly vivi-

fied by an amorphous fluid, in consequence of any electric, nervous, or dynamic influence; but that it consists essentially in the union of two living bodies, each of which is necessary to the development of the other. It is always a living part which is separated or detached from the type, either to become developed by itself, or to seek in another part the means which are necessary for its further development. The inert matter is organised and becomes living in the parent organism, before it acquires an independent existence. This idea is in accordance with the opinion of *Carus*, who maintains that the ova are formed in the ovaria of the female child even before its birth—so that, in the latter months of a pregnancy with a female fœtus, there are actually three generations co-existent in the same individual. *M. Lallemand* has communicated some interesting observations on the changes of form, which the spermatie animalcule may exhibit in the same person, at different periods of life.....

M. Prevost, of Geneva, also has written upon the same subject: treating of the zoospermes, he says: "These spermatie animalcules have not the rounded extremity, as generally represented and described by most authors. They consist of—1, an anterior portion, much drawn out and very mobile, transparent, and moving with rapidity; 2, a middle portion, which is thicker; and 3, a lengthened and transparent tail, which is as moveable as the body.".....

M. Serres has prosecuted his very interesting researches on the branchial respiration of the embryo in mammiferous animals and in birds.....

The anatomy of the nervous system has been much enriched by the labours of *MM. Bazin* and *Baillarger* and more especially of *M. Foville*. This distinguished physiologist has communicated to the Royal Academy a full account of his numerous dissections and experiments, which throw great additional light on the views, held by *Oken*, *Blainville*, and *Charles Bell*, on the vertebral conception or development of the head, the origin of the cerebral nerves, and the analogy between the encephalic and the spinal nervous systems. After explaining the order and mechanism observed in the development of the convolutions and the hemispheres of the brain, *M. Foville* proceeds to point out (what its vertebral conception might lead us *a priori* to infer), that the cerebral nerves are, like those of the spinal marrow, composed of two sets of filaments—the one set arising posteriorly and being exclusively sensory, and the other set arising anteriorly and being exclusively motory: the olfactory, the optic, and the auditory nerves belong altogether to the first set, arising from, or being connected with, the posterior bundles of the medulla. To demonstrate these facts, we must follow the medulla into the cranium, with the characters which it has in the vertebral canal—a task which *M. Foville* has done with the greatest success. In the concluding part of his memoir, he very ably points out and illustrates the relations which the convolutions of the brain have with the calvarium. He shews that its elevations and depressions represent outwardly the elevations and depressions of the parietes of the ventricles.

The researches of *M. Bazin* have for their object to establish the existence of certain connexions, anatomical, physiological, and zoological, between the different parts of the nervous system—to shew, for example, the relations and the manner of association of the sensory and the motory nerves in the encephalon, which the author regards as a centre where the first set terminates, and whence the second set comes out. Those of *M. Baillarger* relate almost entirely to the physical composition or structure of the brain. He has endeavoured to shew that the cortical substance alone is composed of six layers or strata, alternately white and cineritious—an arrangement which, according to his opinion, implies an analogy with the plates of a voltaic pile.*

* Vide Medico-Chirurgical Review for October, 1840. Art. Memoirs of the Academy of Medicine.

M. Longet has, by a series of well-contrived experiments proved that *M. Majendie* has fallen into an error in supposing that the anterior or motory roots of the spinal marrow are at all connected with sensation; and he shews that the conclusions of *Charles Bell* are strictly correct.....

Dr. M. Hall has prosecuted his researches on the reflex functions of the nervous system with great ability, and he has been ably seconded by *Müller, Volckmann, and Budd*.....

M. Fleurens has examined with much success the mode of the growth of the bones and of the teeth. By feeding young animals on madder, he has shewn that the development of these structures takes place by the super-addition of new laminæ and the absorption of the old ones in both structures; but with this very important difference, that in the former the new laminæ are deposited on the outer surface and the inner laminæ are simultaneously absorbed; while in the latter the new laminæ are added internally, and the absorption takes place on the outer surface.....

The physiology of the circulation has not received so much attention during the last year as that of the nervous system. It may be right however, to allude to the researches of *MM. Dubois and Poiseuille* on the organisation of the capillary vessels and the propulsion of the blood through them; and also to those of *M. Latour*, who has shewn that the tissues of cold-blooded animals are not susceptible of genuine inflammatory action..... *M. Donné* has been prosecuting his most interesting enquiries on the intimate structure and composition of many of the animal textures, diseased as well as healthy; he is the first who has produced photogenic images of microscopic objects obtained with the ordinary microscope.

Another labourer in the field of microscopic anatomy has been *M. Gluge*, whose researches have thrown considerable light on the pathology of *ramollissement* of the brain. He has shewn that, in a great number of cases, the white softening exhibits distinct appearances of suppuration; that the grey or coloured softening, without sanguineous effusion, exhibits the products of the first degree of inflammation, the formation of compound globules; and that the coloured softening, with sanguineous effusion, may re-unite the preceding phenomena, or merely the appearance of a mechanical imbibition of a sanguinolent serum. It would seem, if *M. Gluge's* views are confirmed, that in the majority of cases the softening of the cerebral substance is owing to a certain degree of inflammation, which has never hitherto been distinctly detected. With respect to the causes of these cerebral changes, it is more than probable that in very numerous instances they are associated with, if not directly attributable to, hypertrophy of the heart.

The intimate connection between cerebral and cardiac diseases has of late years been studied with great assiduity. Every practical physician must daily meet with instances of it; although it is not unfrequently difficult to determine in head disorders whether they are actually induced, or are merely aggravated, by the co-existing disturbance of the central organ of circulation. However this may be, it is always sound practice to make ourselves acquainted with the state of the heart, whenever we have reason to suspect the existence of cephalic mischief. One of the most potent of all remedies in such cases is digitalis—especially in the form of infusion, and it is unnecessary to say that its action is especially on the heart. The infusion may be associated with minute doses of the corrosive sublimate in many cases with striking advantage.

Clinical Review.

ROYAL INFIRMARY OF EDINBURGH.

CASES IN SURGERY FROM THE CLINICAL PRACTICE OF PROFESSOR SYME.
Reported by J. HENDERSON HARDIE, M.D. Edinburgh.*

1. *Injuries of the Head with Concussion of the Brain—Bleeding from the Ear—Recovery.*

Case 5.—John Macleod, aged twenty-four, was thrown out of his cart on the 23d of March, and sustained a compound fracture of the frontal bone, there being merely a fissure with slight depression on one side. On admission he was insensible, and had profuse bleeding from the right ear. He gradually recovered without operation, deafness on the right side being the only permanent inconvenience resulting from the injury, though an inequality on the surface of the bone can still be perceived.

Case 6.—Joseph Ross, aged thirty-four, had fallen into a dry dock at Leith, on the 10th of August last, when he was found labouring under the symptoms of concussion of the brain, with considerable bleeding from the left ear. The ordinary treatment for such injuries was pursued, and he was dismissed six weeks afterwards, complaining only of deafness on the left side.

Case 7.—John Thomson, aged twenty-six, was admitted on the 5th of September, having just received a severe blow on the head and left shoulder by the fall of a mass of iron, weighing twelve hundred weight, which, fortunately, only grazed those parts in its descent.

The consequence was fracture through the body of the scapula, and an injury at the base of the skull which occasioned copious hæmorrhage from the left ear. He quitted the hospital on the 12th of October, able to resume his employment as a labourer, and suffering only from deafness on the left side.

The reporter observes—as bleeding from the ear is by some considered a fatal symptom when attending concussion of the brain, it has been thought right to mention the preceding cases of recovery under such circumstances.

The hæmorrhage no doubt denotes a fissure at the base of the skull, extending through the lateral sinus, certainly a very dangerous occurrence, though not necessarily a mortal one.

The reporter mentions the following curious case :—

In the spring of last year Dr. James Wood asked Mr. Syme to see a young gentleman, eleven years of age, on account of an alarming hæmorrhage from his ear. He was recovering from a severe attack of scarlatina, in consequence of which both ears had suppurated, when, upon the fifteenth day, a large quantity of blood was suddenly discharged from the right side. During the six succeeding days the bleeding returned three times, to the extent, by computation, of a pound on each occasion. It was deemed proper to place a ligature on the carotid artery, which was concluded to be the source of the hæmorrhage. Bleeding recurred while the operation was being performed; and twice again, to a small extent, not exceeding a few tea-spoonfuls, in the course of the following evening and night.

For several days afterwards there was hardly any appearance of blood, and all the circumstances encouraged the entertainment of favourable hopes. Symp-

* Edinburgh Monthly Journal of Medical Science.

toms of cerebral excitement, however, then showed themselves, and terminated fatally on the eleventh day after the operation.

On examination it was found that the carotid artery was not concerned in the disease; but that a small ulcerated aperture, in the osseous septum between the termination of the lateral sinus and the cavity of the ear, had permitted the blood to escape from this vessel.

Could this have been ascertained previously, stuffing the ear would, of course, have suggested itself as the proper practice.

2. *Punctured Fracture of the Skull—Wound of the Sinus—Operation—Death.*

Biddie Drummond, aged seven years, was admitted on the 28th of February last, having just received an injury on the back of her head from a stroke with a large stone. She became insensible immediately after the accident, and on admission was very drowsy and confused, with stertorous breathing, an intermittent pulse, and a cold surface. Her head was shaved and warmth was applied to her body generally, till Mr. Syme's arrival two hours after she was received into the hospital. A punctured fracture being found—at the occiput in the mesial line—it was considered necessary to apply the trepan in order to remove the depressed bone. This being done, a loose scale of the internal table was removed, immediately after which the child became conscious and answered questions; but a profuse gush of dark-coloured blood issued from the bottom of the wound, and came from the superior longitudinal sinus, opened by the bony spiculum. This hæmorrhage was suppressed by means of a compress and bandage.

Everything went on favourably—the wound and dura mater looking well, the child sitting up in bed—until a week after the operation, when, during a fit of coughing, at least a tumbler-full of blood issued from the wound, inducing syncope; a dossil of lint was placed in the opening, and over it a piece of cork, firmly retained by a bandage. This had the effect of stopping the hæmorrhage for the time.

Two days afterwards considerable restlessness came on, with profuse perspiration, intermitting pulse, insensibility, and other signs of sinking. She died in the course of the night. On examining her head the brain and membranes had an exsanguine appearance, and five drachms of serum were found in the lateral ventricles. An opening, much larger than that seen during the operation, existed in the superior longitudinal sinus at the seat of injury; the margin of this aperture was sloughy, ulcerated, and covered with pus. A fibrinous clot lay in the sinus for some distance anterior to the opening in it, but did not, in any way, tend to close the breach in this vessel.

3. *Gunshot Wound of the Skull—Operation—Hernia Cerebri—Death.*

Robert Blake, aged twenty-seven, was admitted on the 1st of July, after having walked from Habbieshow, at the Pentland Hills, a distance of about eight miles from town. He stated that, from the accidental discharge of a pistol, a bullet was lodged in his head, behind the right ear.

On examination it was found to be so; but from other information, and more particularly from his having attempted suicide some time before, it was thought that the injury had been inflicted intentionally.

The wound—an inch and a half above and behind the right ear—was small and circular, with inverted, blackened edges. A bullet was found firmly impacted in the skull at the bottom of the wound; this being extracted, it appeared that the subjacent bone was depressed. The patient was excited, without any marks of compression.

The trepan was applied by Mr. Syme over the seat of depression, and seven loose fragments of both tables removed. A small clot of blood lay on the dura mater, which appeared rather torn and uneven. Cold applications were ordered

to the head, and strict rest was enjoined. In the evening the patient was bled to syncope, and a large dose of colocynth and calomel was administered. On the following day he complained of headache; his pulse rose rapidly, from 80 to above 100, and he became restless; he was bled to fourteen ounces, and the same purge was repeated. On the 3d he felt much pain in the forehead; to alleviate which, twelve leeches were applied to this part; and in the evening—in consequence of aggravation of the pain—sixteen ounces more of blood were removed from the arm, and a purge—consisting of colocynth, gr. xv. and croton oil gtt. i.—was given. A poultice was then applied to the wound, at the bottom of which the dura mater was seen discoloured. On the 8th, a soft round swelling, as large as a nutmeg, presented itself at the opening in the skull; a bandage and a compress were applied in order to oppose its increase. On the 9th another protrusion manifested itself at the side of that just mentioned; his pulse being rather full, he was bled to the extent of ten ounces. On the 10th, the protruded part was shaved off to a level with the opening in the cranium; and compresses with a bandage were applied. The portion removed weighed 110 grains, and, though in a sloughy state, showed traces of the cerebral substance mixed with blood. Another protrusion presented itself on the 12th; it, however, seemed to be a mere slough.

At this time the patient had a severe rigor; he was feverish, and laboured under insensibility, whilst the signs of approaching sinking rapidly made their appearance. He died on the 17th of July. The head was examined after death, when the dura mater, at the seat of injury, was seen perforated, sloughy, and discoloured; at the same part an abscess, about as large as a walnut, existed in the substance of the brain, which was otherwise in a healthy condition.

4. *Dislocation of the Humerus into the Axilla of seven weeks' standing—Reduction.*

William Stewart, aged fifty-six, a slater from Dumfermline, fell on his right shoulder seven weeks before his admission into the Hospital, on the 3d of December last. The case was looked upon by a bone-doctor in the country as a bruise, and was treated accordingly. All the characters of dislocation of the humerus inwards, however, were well marked, the bone was rather farther forward than usual, and the abnormal direction it followed was particularly observable. After having been for an hour in the warm bath, he was placed horizontally, and subjected to extension, by means of the pulleys, in the direction of the long axis of the body. The bone regained its place without any snap, but escaped on the extension being discontinued. Again reduced, it was retained *in situ* by a spica bandage, and a pad in the axilla.

In this case it was supposed that the glenoid cavity of the scapula had either been altered in its form by absorption, or had been fractured at the time of the accident, and that, in consequence, the head of the humerus was permitted to leave its place.

The warm bath was used in the case just related, as considerable difficulty was anticipated from the long standing of the injury. In such cases Professor Syme generally has recourse to this means, occasionally aided by blood-letting, and nausea kept up by repeated small doses of the tartarized antimony, given previously to the attempt, as it is found difficult to induce this state whilst the efforts at reduction are being made.

"Besides the above case of dislocated shoulder, three recent luxations of this joint presented themselves; they were all into the axilla. In the first of these I effected reduction by means of the heel in the axilla whilst extension was made from the wrist; in the second by placing the knee in the axilla whilst the arm was extended transversely; and in the third case, which had just happened, I attained the object, without any assistance, by suddenly abducting the arm, rotating it outwards, and thrusting the bone forwards.

In the first of these three cases the method mentioned was followed, as some difficulty was anticipated, and assistance could not be readily procured. The second method seems, in ordinary circumstances, the most convenient;—whilst the one last mentioned has been found generally to answer, when an opportunity was afforded of effecting reduction within two or three hours after the injury had been received."

5. *Stricture of the Urethra—Incision—Cure.*

Alexander Williamson, aged twenty-four, from Queensferry, was admitted on the 24th of August last, with a very tight stricture of the urethra between two or three inches from its orifice. About two months previously he had retention of urine, and applied to a practitioner for relief. Attempts were made to introduce the catheter without success, but with the effect of causing great pain, and a copious flow of blood. Mr. Syme tried repeatedly, and on different days, but in vain, to pass a catheter of the smallest size, flexible as well as solid; and at length resolved to cut through the strictured part. This was done by introducing the point of a sharp-pointed curved bistoury through the integuments, upon the extremity of a bougie pressed down as far as possible along the canal.

A full-sized catheter was immediately afterwards passed into the bladder, and retained there for twenty-four hours. The wound was quite healed on the fourth day, when the man left the hospital. No. 11 of the catheter scale has been passed several times since then, and the canal does not evince any disposition whatever to contract.

It is remarked, that when strictures occur in the anterior part of the urethra, they are apt to acquire an extreme degree of tightness. If situated at a greater distance from the orifice, their apparent narrowness may be attributed to the difficulty of guiding instruments through them. But the superficial position of those now under consideration, prevents any such ambiguity, and the successful issue of the case just related, affords encouragement to employ the summary measure of incision, when the ordinary method of dilatation proves impracticable.

6. *Hare Lip.*

Some cases are related for the purpose of shewing,—

1st. The impropriety of operating at an early age. 2d. The advantage,—both as regards the firmness of union, and the appearance of the lip,—derived from a free removal of the round and thickened margins of the fissure. 3d. The danger of leaving the lip unsupported sooner than the fourth day, at least, after the operation.

7. *Popliteal Aneurysm.*

1. *Spontaneous Cure.*—Henry Williams, aged thirty-six, a weaver, was admitted on the 20th May, 1839, on the recommendation of Mr. Cunningham of Kirkcaldy, to have the femoral artery tied for popliteal aneurysm. The tumor occupied the hollow of the ham—it was circumscribed in form—and, from the distinctness of its pulsation, seemed to contain little coagulum. The patient's attention had been first directed to the complaint about two months before, by an uneasy feeling of stiffness in the part, after a particularly severe day's work.

He was confined to bed, and ordered a laxative to prepare him for the operation. Next day the pulsation had become extremely obscure, and though it slightly returned the following day, at the end of two days more it could not be perceived at all. The articular arteries were then felt to be much enlarged, and the tumor quickly diminished in size, while it increased in firmness, until merely a small knot the size of an olive remained. He was dismissed at his own desire on the 31st of May.

It is not very often that aneurysm in an early stage is cured spontaneously. Mr. Syme says,—“It has been a question whether an early or advanced stage of the disease is more favourable for success,—the undilated state of the anastomosing vessels being considered adverse in the former, and the quantity of extravasated blood an obstacle in the latter. From all that has fallen within my own observation, I should have no hesitation in preferring to operate at an early period, having never witnessed in my own practice the slightest unpleasant symptom of defective circulation, however small and recent the tumor might be.”

Mr. Syme comments on the bad consequences that ensue from ligature of the femoral artery. He has, however, tied it seven times with success. “But within the period of doing so, I am not aware of any case that has terminated favourably in this city, while I have either seen or heard of four that ended badly, viz. one by inflammation of the vein, one by mortification, one by hæmorrhage, and one by amputation.” He observes that the femoral artery has a closer connexion with the vein, and though it is felt by the operator's finger, after the fascia has been opened, round and distinct, and as if insulated from the surrounding parts, except by the loosest connexions, any attempt to pass the ligature, without further dissection, either proves abortive, or if executed by force, exposes the patient to the greatest danger. “I have seen a gush of dark-coloured blood proclaim transfixion of the vein; I have seen on dissection a portion of this vessel included in the ligature; and I have also seen the external coat alone grazed, as it were, by the needle, but nevertheless excited to fatal inflammation. If, on the other hand, this danger be avoided by using blunt instruments, or the finger to detach the artery from its connexions, the patient is exposed to the hardly less disastrous consequence of hæmorrhage, through ulceration or sloughing of the vessel.

To tie the femoral artery safely, the surgeon should be impressed with the conviction that the operation is one not of difficulty, but of great nicety. He should make an incision between two and a half and three inches long in the proper situation, cut through the fascia to a smaller extent, and expose the sheath of the vessels. So far he can hardly go wrong; but then, instead of hastening to pass his needle, he should, by ligature, or the temporary application of spring forceps, close every little vessel that discharges enough of blood to obscure distinct vision of the object he has in view. Let him now seize the sheath with dissecting forceps, and gently raising it, make a small opening by means of a straight narrow sharp-pointed knife. The cellular and fatty substances which envelope the vessels in variable quantity, are next to be elevated and divided in successive portions, until the external coat of the artery appears quite distinct and *white*, when the needle may be passed without the slightest difficulty or danger.”

8. *Brachial Aneurysm.—Sac laid open.*

Case.—William Smith, aged twenty-three, was admitted on the 19th of October last, on account of a pulsating tumor at the bend of the arm, which had resulted from his being bled there nine weeks before. In consequence of the pressure that had been used to remedy the aneurysm, the skin covering it was ulcerated to a small extent; the pulse at the wrist was nearly as strong as in the sound limb.

On the following day, Mr. S. laid open the sac, having previously applied a tourniquet, turned out the clots, and readily discovering the wound of the artery, passed the needle first above and then below it, so as to convey a couple of ligatures, which were tightly tied. No bad symptoms followed, and the patient was dismissed on the 18th of November quite well.

Mr. Syme always resorts to this operation which he finds as effectual as easy.

9. *Varicose Brachial Aneurysm—Operation.*

Case.—Agnes Easton, aged twenty-three, admitted May 28, on account of injury in venesection three months before. On examination, it appeared that a communication between the artery and vein still existed, through the medium of the aneurysm, the latter of the vessels being considerably distended, and conveying a jarring sensation to the hand placed over it, while the characteristic purring sound was distinctly heard, by applying the ear, either directly or with the intervention of the stethoscope.

A tourniquet having been screwed on, the sac was laid open freely, so as to avoid the vein. Instead of the laminated coagulum, which lines the interior of aneurysms, presenting itself, it was then seen that the cavity contained only fluid blood, and that the surface of its parietes was perfectly smooth, white, and, in short, similar to that of an artery. There was hence some difficulty in detecting the wounded part of the vessel; and it was necessary, partly by dissection, but chiefly by tearing, to remove the principal part of the sac. The orifice being then discovered, Mr. S. exposed the artery above and below it, so as to pass a ligature at each of these points. No inconvenience was experienced, pulsation being felt at the wrist the evening after the operation, and the patient was dismissed quite well on the 16th of June.

The patency of the communication with the vein, in this instance, prevented the remora and coagulation of blood in the tumor; and ligature of the artery, without opening the latter, would probably have been of little service.

10. *Aneurysm by Anastomosis—Excision.*

“ William Farquharson, aged fourteen, from Perthshire, was admitted on the 7th of September, 1839.

Having finished my visit, I was about to leave the hospital, when the house-surgeon told me that a case had just been admitted under my care, that required immediate attention. The complaint, he said, was a sore on the leg which had a great disposition to bleed, and that having taken off a bandage from the limb, he had found it necessary to apply a tourniquet, to arrest the profuse hæmorrhage which ensued. On going into the ward, I found the patient in bed, with his leg lying in a pool of blood. The outer side of it, a little below the knee, presented a discoloured and slightly elevated surface, extending from the head of the *fibula* about four inches and a half downwards, and three in breadth. The blood appeared to have issued from two small irregular ulcerated openings near the centre of this part. Over these compresses were placed, and secured by a roller applied firmly from the toe upwards. This arrested the hæmorrhage, and afforded time to inquire into the case, and consider what should be done.

The patient stated that, to the furthest extent of his recollection, there had been a dark-coloured mark, about the size of a half-crown piece, in the seat of the disease; but that this had occasioned no inconvenience until two years before, when an opening took place, and blood, in large quantity, gushed out. The discolouration had then extended, and been accompanied with elevation of the surface. Subsequently the bleeding frequently returned, and in his lonely occupation of a shepherd, repeatedly threatened to prove fatal. Latterly he had suffered in this way every two or three weeks, and become so much exhausted, that his friends, seeing him about to sink under the complaint, undertook the long journey from their distant residence in the Highlands, in quest of relief.

There could be no doubt as to the nature of the disease, which was evidently a tumor composed of erectile texture; but great difficulty seemed to lie in the way of any efficient treatment. The large superficial extent and position in part over the bone, rendered the use of ligatures inapplicable, while from the uncertain depth, and large portion of skin engaged, excision appeared an ope-

ration not only formidable in its execution, but unpromising in its result. In these circumstances, I resolved to attempt the excitement of inflammation and adhesion between the interstitial surfaces of the morbid structure, and with this view, two days afterwards, having previously applied a tourniquet, cut through the whole length of the discoloured integuments, detached them from their subjacent connexions, and stuffed the cavity with lint, the bandage being then applied as before.

Every thing went on well for six days, when the roller being loosened, blood streamed out with undiminished force. The patient was now reduced to a state of extreme weakness, and I was in despair of relieving him in any other way than by amputation, when a gentleman, whose valued acquaintance I owe to this case—Dr. Little of Sligo, encouraged me to try extirpation of the disease, by mentioning that he had known this done with success on an equally unpromising occasion. The whole of the unsound surface having been embraced by an elliptical incision, I divided the fascia, and was glad to find the muscular substance not implicated. Cutting through it parallel to the base of the disease, I arrived at the bone, and readily completed the separation from it, as the periosteum was not engaged. Three or four vessels were then tied, and lint being applied to restrain any oozing from the surface, a roller was put on, and the tourniquet removed. No unpleasant symptom followed, and though the cure, as might be expected, proved tedious, it was ultimately complete.”

GUY'S HOSPITAL.

1. *Fatal Case of Chorea.**

The patient was a sickly-looking boy, aged fourteen. He appears to have enjoyed good health until he was five years of age, when he received a blow on the vertex of the head from a shovel, which caused a deep wound of about two inches in extent. During the process of healing, pains arose in the head, and have continued almost without any intermission to disturb him ever since. About a month after the injury, his mother, for the first time, observed that he was affected with convulsions. The attack then assumed a very severe form, both as to intensity and duration, and similar attacks have, from that time, constantly recurred, but at irregular periods, the intervals of the disease gradually lengthening, while the disease itself became less and less severe at each successive time of its occurrence. Three months ago, however, his sister died, and the news of her decease having been told to him somewhat suddenly, affected him very much. He rapidly became much worse in health; his headache assumed a very aggravated form, and he complained of weakness in his left side. Five days previously to his admission into the hospital, to all appearance without any immediately exciting cause, he was seized with an attack of chorea of a most violent form, so that at one time it required four men to hold him. He screamed loudly at night, foamed at the mouth, and attempted to bite those who approached him. The attack was ushered in by increased intensity of headache, and by vomiting, which last symptom continued for three days. He rapidly became worse; could not obtain rest nor swallow food, and lost all power of articulation. When admitted into the ward he appeared much worn, and his convulsive actions were so violent that it was necessary to strap him down to his bed. The treatment consisted in the administration of hyoscyamus and camphor at night, and ammonia in the day. Under this he appeared to

* *Prov. Med. and Surg. Journ.* Dec. 5, 1840.

improve, for the convulsions and cephalalgia became less and less severe, and his articulation to a great extent returned; but notwithstanding support, as beef tea and wine, were given, in a few days he gradually sank, exhausted. Previous to his admission he had been bled, a measure which Dr. Bright considered very seldom judicious, excepting when the disease occurs in robust ruddy young women. It is curious that, notwithstanding the most careful examination after death, nothing morbid was detected either in the brain or spinal cord. There was a slight inflammatory deposit on the dura mater, but not corresponding with the site of the original blow, and certainly altogether insufficient to cause the disease.

2. Mr. Bransby Cooper upon Hydrocele.*

Abnormal Position of the Testis.—Do not merely satisfy yourselves as to the existence of a transparent tumor, and proceed at once to puncture it; but having the room darkened, and the light shaded by your hand, examine if the opacity denoting the situation of the testicle is behind, as is usually the case, before, or at one side. I have had to puncture at the back of the sac, because the testicle was adherent to the anterior part; but if practicable, it is always better to do it on the side, because as may be seen in this preparation, a number of adhesive bands may cross the cavity of the tunica vaginalis, uniting the testicle to the anterior part of the sac, but leaving the cord behind, and in the latter case, you might wound the spermatic artery by a posterior puncture. Sometimes these adhesions of organized lymph will form two or three sacs, constituting what is called encysted hydrocele; and then when you tap, instead of getting ten or twelve ounces of fluid, as you expected from the size of the tumor, you find only two or three. In this case each cyst may be opened by separate punctures through the scrotum; or you may do as I have been obliged to do, evacuate the fluid by passing a needle along the canula without this having been withdrawn. You should never inject in these cases, because the existence of the cysts depends on inflammation, and evidences such a tendency to inflammatory action, that the mere puncture will probably produce a radical cure. Injection, perhaps, would be admissible, however, after a second tapping. Sometimes you have only one of these cysts, and that a very small one

Case.—A gentleman, aged 54, consulted me respecting a disease of the left testicle, from which, however, he suffered so little, as at times to lead him to suppose the disease was imaginary, although a small swelling was perceptible, which I examined and found at the upper part of the testicle, just over the head of the epididymis. It was soft and fluctuating; but at first I merely suspected it was a distension of the spermatic veins,—in fact, a partial varicocele. Being doubtful, however, I examined it with a candle, when the nature of the disease was rendered clear, by its perfect transparency. The tumor being tender to the touch, and so small and deeply seated, I ordered a few leeches, evaporating lotions, purging, and the use of a suspensory bandage, lined with oil-silk, rather than puncture in the inflamed state; and I believe the gentleman quite recovered.

Now, I am not quite sure that this was a cyst of the tunica vaginalis, as it might have been merely an adventitious formation, external to the serous membrane. I know of no way of distinguishing this before puncture, but the nature of the fluid will determine it; for if the fluid have been secreted from the tunica vaginalis, it will be found highly albuminous, coagulating by heat and nitric acid, while the fluid of the more superficial cysts contains a very slight trace of albumen.

* Prov. Med. and Surg. Journ. Jan. 30, and Feb. 6, 1841.

Complication with Hernia and in Old People.—There is another point you must ascertain before operating, and that is, whether the hydrocele be complicated with hernia. Your patient states that he had the usual well-known symptom of hernia, and you find the posterior portion of the tumor opaque. Well, even if the hernia be irreducible, there is no danger in the palliative treatment, if you take due caution; but it is better not to inject, for fear of inflammation extending to the hernial sac. You would also be satisfied with the palliative means in very old people, whose constitutions it is found are incapable of supporting acute local inflammation; and you will sometimes be called to operate on persons of a very advanced age. I remember an old Norfolk admiral coming to me with a very large hydrocele, and he was either 89 or 90 years of age; so, before puncturing, I asked him if it gave him much pain. "Oh! no," said he, "but Mrs. H. finds it very inconvenient." (loud laughter.) Neither should I inject a hydrocele, the first time of tapping; for it often happens, though the patient may have complained of very little pain, that the mere irritation of the canula sets up an altered action sufficient to effect a permanent cure.

Iodine Injection.—For the last two or three years Mr. Cooper has used this exclusively—two drachms of tincture of iodine and six drachms of water; two drachms of which mixture may be injected and left. I have a note here stating that Dr. Henry Goodeve has used this injection in India in 276 cases, and has only failed twice. Since I have used the iodine, I have not had a single case where the injection failed to effect the radical cure, and only one where I had to repeat the injection. This was a case where the tincture of iodine that I used was bad, and as I felt convinced it would not succeed, I repeated the injection four days afterwards with some which had been properly prepared. The chemists will tell you more of this matter than I can; but if the tincture be made without the admixture of hydriodate of potash, a precipitate forms when you add the water, and the mixture is quite useless, but when properly made the watery solution is perfectly bright.

Always place your Patient in a chair.—Always place your patient on a sofa, or let him lean back in a chair, because any one is liable to faint, however bold he may appear; and then, if you have operated while he is erect, he falls, probably upsets the basin, hurts himself, or frightens his friends, all which appear very clumsy, especially in a private house.

Never let a Patient walk home after Injection.—Even after simple tapping, I have several times known inflammation thus set up sufficient to bring about a radical cure; and I know of several cases where the patient has walked after injection, where great sloughing, and in one case death, ensued. I have notes of a case here where acute inflammation was thus set up, which terminated in gangrene and death in thirty-six hours, though the sac was not injected. William Knowlson, aged 64, was tapped in the surgery by one of the dressers, and about twelve ounces of common serum evacuated. Injection was not practised. He walked about four miles on the same day, and in the night was attacked with acute inflammation of the tunica vaginalis. The next day he was seen by a parish surgeon, who treated him for strangulated hernia, and afterwards sent him into this hospital, when there was great swelling of the scrotum and prepuce, and much irritative fever. Active treatment was adopted, but in less than twelve hours symptoms of gangrene of two-thirds of the scrotum came on, when stimulating poultices were applied, and he took calomel and opium with wine, porter, quinine, and as much nutriment as possible; but he died within 36 hours from the first attack. Sir Astley Cooper also mentions cases where dangerous symptoms came on after the patient had been allowed to walk; and one among others, of a gentleman who went down to Birmingham in the

mail soon after injection, and sloughing of the whole of the scrotum followed. He also gives two cases, where he thought suppuration was thus produced.

Dangers of the Seton.—Here, gentlemen, is one of the cases which have led me to abandon the use of the seton, and to recommend you to follow my example. A military gentleman, aged 52, had twice submitted to injection of the tunica vaginalis, but without success. I therefore determined to employ the seton, which I passed with a long needle, after having drawn off the fluid. On the evening of that day there was but little uneasiness, and the seton was left in. The next morning he was doing well; inflammation not beyond the desirable extent; but at the evening visit there was considerable pain and swelling, with great anxiety of countenance. The seton was withdrawn, and leeches and cold lotions applied to the part. A dose of calomel and opium was also given.

Aug. 30. Delirious all night. Tumor increased in size, dark-coloured and ecchymosed. Port-wine poultice; fomentations; calomel and opium.

Evening. Delirium continued; bowels open; pulse 130, very compressible; tongue dry; brandy and water; ammonia and opium.

21. Scrotum in a state of slough; had a better night, less delirium; pulse 100; tongue moist. From this time he slowly improved, and ultimately recovered.

I had another case, in Job's ward, of a patient who had had hydrocele frequently injected without success. I therefore passed the seton. Violent symptoms followed. Suppuration took place; I therefore laid the tunic open, and the man ultimately recovered, but with great risk.

Tetanus after the Operation.—I remember a gentleman who submitted to this operation under the care of Sir Astley Cooper; wine and water being the injection used, which did not at the time produce more than the usual degree of pain. In twenty-four hours after, however, the patient complained of uneasy sensations about his jaw, attended with difficulty in swallowing, and shortly afterwards positive tetanus supervened. Calomel and opium were administered in large doses; fomentations were applied to the scrotum, which did not appear inordinately inflamed; and the patient ultimately recovered, although at one period of the case seemed hopeless. It may be worthy of remark that this gentleman was a native of the South of Spain.

*Calculus projecting in the Loins.**—I once saw a case of this kind with Sir Astley Cooper. He took me over to Limehouse, to see a gentleman who had an abscess, which was supposed to depend on disease of the hip joint; and, on opening this abscess, he put his finger to the bottom of the wound, and, feeling something hard and rough, thought it was a piece of exfoliating bone, but, when he had removed it by the forceps, it proved to be a urinary calculus. Well, after this, by a patient investigation of the symptoms, he was enabled to trace their cause from its formation in the kidney to its passage along the ureter, and then, as it had not reached the bladder, it had evidently passed through the ureter by ulceration, and excited suppuration in the gluteal region.

Advantages of Look Tea.—I remember once going to Lambeth with Mr. Cline to see a patient; and this man had tied a cord across two of his bedposts, over which he threw his legs, and thus suspended himself by his hams. There was no doubt some ulceration of the bladder, and by this posture he made the stone gravitate from the ulcerated part. You may be inclined to say, when you consider what an excessively painful posture it must be to hang by hours together on a cord by the hams, that the remedy must be worse than the disease; but

* Prov. Med. and Surg. Journal, Feb. 13.

you must remember that pain is a comparative state; and it shows you what intense agony a man must suffer to lose the sense of pain, which must follow such a position, in the relief it afforded him. This man had refused an operation till it was too late, until, indeed, it was plain the bladder was so ulcerated, that no surgeon would operate. Mr. Cline was talking over various remedies, proposing first one and then another, all of which, it appeared, had been tried, till at last he said he had seen great relief follow leek-tea. Well, this was given him, and afforded the most astonishing relief, so much so, that he was enabled to resume a recumbent posture. However, it soon lost its effect, and the poor fellow died, completely worn out. I have seen it tried several times since, sometimes with and sometimes without effect; and I would advise you to bear it in mind, as worthy of trial, though you cannot foretell in what cases it will afford relief and when it will not.

Never operate unless you hear the Stone at the time.—I would lay it down as an axiom, that you should never perform an operation for the removal of stone from the bladder, unless you can hear the sound of the steel against the stone at the time of the operation. Do not be satisfied with the sense of touch, without that of hearing also. I distinctly felt and heard the stone in the bladder of the man now in the hospital this morning; but if I could not do so in the theatre to-morrow, I should put off the operation for that simple reason. You don't know what has occurred. The stone may have become sacculated; it may have passed out of the bladder through the urethra, or by ulceration; and in all these cases an operation would be improper.

Sir Astley cut a Patient for Stone in his Consulting Room.—A child was once brought to Sir Astley Cooper, in whose urethra he distinctly felt a stone. He therefore told his man to hold the child on his knees, and separate the thighs, just as we tie them in lithotomy, and then made a cut through the perineum upon the stone. However, just as he was about to withdraw it with the forceps, it slipped back into the bladder. He determined not to leave off till he had effected his object, and accordingly carried on his incision into the bladder, and removed the stone with a pair of dressing forceps. He took his guinea, and the child was taken home in a hackney-coach, and did uncommonly well; and I suppose Sir Astley is the only man who ever performed the operation of lithotomy on a mere morning patient in his consulting room.

NEW YORK HOSPITAL.

REPORT OF SURGICAL CASES. By JOHN WATSON, M.D. one of the Surgeons to the Hospital.*

We select some of the more interesting of the cases reported.

1. *Varicocele relieved by removing a portion of the Integuments of the Scrotum.*

John Pierce, aged 21, a seaman, admitted June 23, with a large varicocele on the left side. On the day after admission, as much of the integuments of the scrotum as could be drawn together by the fingers over the enlarged vessels, was firmly seized and held together between the branches of a long pair of forceps, and the part above the forceps was then removed by one stroke of the bistoury. The flap appeared to form about one-third of the whole integuments

* New York Journ. Med. and Surg. Oct. 1840.

of the scrotum; and the retraction of the remaining portion was so great immediately after the operation, as to leave the whole of the tunica vaginalis on the left side exposed, and to allow the edges afterwards to be drawn together by sutures only with the greatest difficulty.

For several days after the operation, the patient continued comfortable; and though no portion of the wound united by adhesion, yet it contracted very rapidly, and presented a healthy granulating surface. But on the 1st of July, he was seized with a severe chill, with nausea and vomiting, which was followed by febrile excitement, and finally by a severe attack of erysipelas, which involve the integuments of the scrotum, penis, and parts adjacent, and extended to the sub-cutaneous cellular tissue in which it proceeded to suppuration. One or two openings formed along the base and body of the penis, continued to discharge freely for several days. As the erysipelatous inflammation subsided, the original wound, as well as the ulcerated openings, gradually contracted; and by the 20th of July, they had entirely healed.

The patient left the hospital on the 4th of August. The cicatrix produced by the healing of the wound was sufficient to support the distended veins, and prevent them from protruding much below the external abdominal ring; but they had not become permanently contracted or consolidated. After the patient had been for some time in bed, the swelling would appear to be effaced; but after he had been walking about the house all day, the enlargement of the veins was still apparent. He was, however, permanently relieved of the dragging sensation and pains of which he complained before the operation.

2. *Operation for Inversion of the Toe-nail.*

In this case the disease was of long standing, and had resisted every form of treatment, short of extirpation of the nail itself. The soft parts on both sides of the nail of the great toe on the right foot were ulcerated and in a fungous condition, and so sore as to prevent the patient from using his foot. Palliative means were employed until the irritability was in some degree subdued, and on the 21st of January the whole nail was removed by a modification of Lisfranc's operation.

The edge of a straight bistoury was carried perpendicularly through the integuments behind the matrix of the nail down to the bone, then directed forwards and carried horizontally under the nail toward the extremity of the toe; thus removing the nail and its matrix at a single sweep. The wound healed by granulations, and the patient was discharged on the 10th of February.

3. *Fracture of the Patella badly united by ligamentous union; followed by diffuse Inflammation and Suppuration in the neighbourhood of the Knee-joint.*

John Harrison, seaman, of Massachusetts, aged 28, admitted on the 8th of December, 1839, with an acute attack of inflammation which soon resulted in a diffuse abscess in front and on each side of the right knee-joint.

About eighteen months previous he had a transverse fracture of the patella, for which he was confined, with the limb in a straight position, about ten weeks. At the end of this time the fragments were in apposition; but as he began to use the limb the ligamentous union gradually yielded until the two fragments of bone became separated to the distance of three inches and a half from each other. In this condition he remained, able to walk about with a stick until the present attack. The inflammation and suppuration, though profuse, did not involve the cavity of the joint.

The case was treated as an ordinary abscess, and the patient cured February 10th, 1840.

Contraction of the Neck from Injuries.

Dr. Watson alludes to three cases.

In one of these, an injury behind the neck had produced a degree of tension and permanent inclination of the head towards the right shoulder. This deformity came on gradually a few days after the injury, and persisted about two months. The patient was finally relieved by local depletion, counter-irritation, and passive motion.

In another case, a similar injury led to paralysis of the muscles on the back of the neck. The patient was unable to support his head erect, the chin falling towards the breast.

In the third case, tension of the neck, owing probably to inflammation extending along the sheath of the right sterno-mastoid muscle, followed an acute attack of tonsillitis. The deformity continued about two weeks after the inflammation had left the throat and then gradually subsided.

Tetanus treated by Assafetida.

Dr. Watson used the assafetida in five cases. Two terminated favourably. He would prefer administering it by the rectum.

Opium mixed with Superacetate of Lead, in large dose, swallowed with impunity.

A seaman under treatment for a carious ulcer near the lower part of the thigh was seized with slight erysipelatous inflammation around the surface of the sore, for which the house-surgeon prescribed an opiate lotion, to be made from thirty grains of opium, and sixteen grains of sugar of lead. The patient, mistaking the directions, swallowed these substances in their dry state, about 8 o'clock in the evening of January 26th. About midnight he began to feel unwell, and think he threw up a part of the powder; but he did not rest well during the night; no symptoms of narcotism followed the accident; on the following morning he was as comfortable as usual, and unaware that anything had gone amiss.

"Is it possible that the superacetate of lead, which is known to precipitate the extractive matter of vegetable infusions, could in his case, have had any effect as an antidote? The opium was good, and the patient had not been in the habit of using this substance.

An instance somewhat similar happened in the hospital in the summer of 1837. A patient swallowed, by mistake, a drachm of opium mixed with a scruple of the superacetate of lead. The accident was discovered in about half an hour; an emetic was administered, and no serious consequences ensued."

SOUTH UNION WORKHOUSE.

EPIDEMIC OPHTHALMIA.

Dr. Lees gives an account of this in the Dublin Journal for March.

The ophthalmia commenced on the 4th of June last, in a part of the institution (separate from the main body of the building) allotted for the children, and capable of containing four hundred, situated in an open and salubrious place, having a southerly aspect, but which, from being over crowded, as well as from some other defects, has proved the most unhealthy part of our establishment, an epidemic of petechial fever having broke out there a short time previously.

"The weather at this time was very cold, with sharp winds; so that in the first few cases I considered it as simple acute ophthalmia, excited by particles of dust having been blown into the eye; however it spread so rapidly, and assumed such a decided catarrhal character, with a peculiar state of conjunctiva and pupil, that I was led to regard it as an epidemic disease, and in this opinion I was confirmed by Mr. Creighton, who immediately recognized the disease as one which they frequently suffered from while he had charge of the Foundling Hospital, and which he regarded as of a highly contagious character."

The following case displays the features of the epidemic :—

Anne Magill, æt. 11, says she went to bed perfectly well on last night, (June 22,) she awoke with a sensation of sand in her left eye; there is now profuse lachrymation, with great itching; no intolerance of light; the pupil is largely dilated, and very sensitive, the palpebral conjunctiva, semilunar fold, and caruncle are very fluid, villous, with slight stringy discharge on the lower lid, which comes away easily, but forms again in a few minutes; there is no pain, except at night, nor constitutional disturbance complained of; but the tongue is awollen, flabby, coated with yellow fur.

R. Calomel iij., Rhei. gr. x. ij. H. fiat Bolus.

And wash the eye with tepid water.

Next day the conjunctiva covering sclerotic was greatly congested, vessels of bright red with slight ecchymosis, as if they had given way in some places, profuse lachrymation, with stringy, mucous discharge from both eyes. Dr. Lees dropped the undiluted liquor plumbi into the eyes; it gave no pain; it was continued on the third day, she was nearly well, and, with bark and magnesia, she was quite cured in a week.

There was generally but little or no constitutional disturbance, in some there was slight catarrhal fever. The disease was, however, very liable to relapse more than once, and then became always more serious and intractable, particularly in strumous subjects, in whom it invariably became pustular, with a ferretty condition of eye, and great intolerance of light. It was contagious, for almost every adult who was occupied about these children suffered from its effects; but in them it generally assumed a more serious aspect, being more painful, and attended by severe chemosis.

The Report exhibits the good effects of the undiluted liquor plumbi.

SIR PATRICK DUN'S HOSPITAL.

DR. LENDRICK'S CLINICAL REPORT.*

It is a good thing sometimes to give up Physick.—"It has long been my opinion, that the efficacy of treatment, in many chronic cases of disease, is misunderstood; and I have ventured to broach a theory which I think is confirmed by several facts, while it proposes the advantage of accounting for some extraordinary occurrences, and I allude to the operation of medicine, in saturating the constitution; and not only not relieving, but aggravating disease during its exhibition; although, on its administration being relinquished, the beneficial effects begin to appear. That this takes place, with respect to the administration of mercury, in venereal and some other diseases, is unquestionable. I think the principle may be extended to numerous medicines, and cases. That the disease does not subside *spontaneously* is proved by the circumstance, that, while formerly left to the efforts of nature, it became aggravated. That medicine generally succeeds better, in chronic diseases, by being occasionally laid aside and resumed, than by continued perseverance in its use, is a fact well known.

If this principle, that remedial treatment sometimes develops its effects slowly and subsequently to, instead of during a course of medicine, should be established by further experience, many difficulties connected with medical practice will be accounted for. We shall cease to be surprised, that after the efforts of experienced physicians have disappointed expectation, some empirical practitioner or inert medicine should seem to effect the cure; and many of the feints

* Dublin Journal, March, 1841.

accomplished by homœopathsists, or attributed to imagination, may thus admit of solution."

We have observed that patients are generally better on giving up physick that does not suit their case. When it *does* they had better go on with it. Dr. Lendrick is a wag and will understand this.

2. *There is something in Animal Magnetism.*—"Animal magnetism is by most of the medical profession considered to be an imposture. I am, however, convinced, that in some cases a nervous influence exists between operator and patient, at least at a few inches distance; this conclusion I formed from witnessing our hospital experiments made on the *male* patient, *behind*, and under circumstances that precluded any suspicion. The opinion that a nervous *aura* exists beyond the material structure of nerves, has been held by some of the first modern physiologists."

"Future investigations must determine the extent of the operation of animal magnetism, and how far it can be rendered a remedial agent. To assert, without examination of the facts, that the system *must* be false, is unworthy of men of science; the same mode of reasoning, if it deserve the name, might have been applied to most discoveries. I confess, however, that I have not had opportunity, either at Sir Patrick Dun's Hospital or elsewhere, of determining the question of animal magnetism further than that there is *something* in it."

What that *something* is, we think we can tell the Doctor—it is just—*humbug*.

3. *Moxæ.*—"The utility of moxæ, and the preference to be afforded to them rather than other modes of forming issues, were confirmed during my recent attendance at Sir Patrick Dun's Hospital. In a case, that of Flood, admitted November 15th, labouring under what is termed '*morbus coxæ senilis*,' the effect of a severe fall, with shortening of the limb and infirmity; and in those of Mrs. Dolan and Mrs. Carolan suffering from obstinate sciatic neuralgia, the beneficial operation of moxa was especially remarkable. I have often tried the caustic issue in similar cases, but without equally beneficial results. There is something in the action of *fire*, of which farriers and other humble practitioners (of whom the learned might sometimes take a useful lesson) are fully aware.

Moxæ are applied at Sir Patrick Dun's Hospital by soaking the lint, of which they are formed, either in a saturated solution of *chromate* of potass, or in a solution of acetate of lead of the strength of about a drachm to the ounce of water; either of the solutions answers the purpose, and the opinions of the pupils were divided as to their relative advantages. The great point to be attended to is, to leave the moxa long enough on the part; this is determined, not only by the dark and shrivelled appearance of the skin surrounding the base of the moxa, but also by the *diminution* of pain on the sensibility of the surface being destroyed by the full accomplishment of the burning process. A piece of lint, dipped in water of caustic ammonia, immediately applied, as recommended by Baron Larrey, much mitigates the pain consequent on the application of the moxa; I question whether, on the entire, the suffering is as great as that from a caustic issue; the benefit derived is generally so considerable, that however the application of the first moxa may be dreaded and objected to, that of the second is often practised at the solicitation of the patient."

It is clear that the Dr. is a fire-worshipper, if not a fire-eater. We never saw a patient who asked for the second moxa, but many who have run away from it.

Nauseous Physick.—"I have for some time endeavoured to render medicine palatable without being inefficacious. This object is easily effected in the case of pectoral medicines, on account of the mucilaginous and syrupy ingredients which generally enter into their composition; as to others, the nauseous flavour may, in general, be much lessened by administering them in the state of *effervescence*.

During the present medical session I made several trials at Sir Patrick Dun's Hospital, with the above object. Astringent medicines in diarrhoea can scarcely be used in the state of effervescence, on account of the flatulence thus produced.

The ordinary chalk mixture I have often found to disagree with the stomach, and it does not seem to be of much efficacy, except in some cases, as a counter-act of acidity; I accordingly substituted a mixture, formed of syrup of orange, tincture of kino, tincture of rhatany, and a small quantity of laudanum. This, which was sportively named by some of the pupils "*syrupus mirabilis*," was found very effectual in cases of diarrhoea; and the patients declared it to be cordial and invigorating.

The producing the opposite state, that of purging, otherwise than by disagreeable means, is not at all so easy a matter. Most purgative medicines are very unpalatable; or, if the concentrated principle, such as that of croton oil, scammony, elaterium, &c., be brought to bear, severe griping and sickness are produced, at least in some constitutions. I have administered croton oil successfully in many cases, not only by diffusing a minute quantity throughout purgative pills, but also by mixing it with spirit and mucilage, and exhibiting it in quarter drop doses, with milk, as directed by Dr. Conwell. On the entire I prefer, for general use, two aperient pills, administered every three or four hours, and, after each dose, a seidlitz draught: for the former any of the usual formulæ may be used, and I have found *melampodium* a very useful adjunct. Where patients have a dislike to pills, senna mixture may be administered in effervescence. In hospital practice enemata afford ready means of effecting our object, after the failure of medicine given by the mouth. Although the prejudice against that description of remedy long impeded its use in private practice, except in case of downright necessity, it can now be so readily self-administered, or used by domestic means, that patients rarely object to it. In one hospital case, the necessity of using purgative medicine was considerably superseded by allowing the patient preserved tamarind pulp as a refreshment. Combinations of this, manna, honey, &c., are frequently used in nursery practice. There is no doubt that many palatable drinks (like the French *ptisans*) might be made to answer the two-fold purpose of beverage, and of aperient medicine."

Teetotalism—Small-beer versus Tea and Coffee.—"A man named Keegan, about 40 years old, was admitted into Sir Patrick Dun's Hospital, labouring under symptoms resembling delirium tremens. He suffered lately from epileptic fits, and his state appeared to border on insanity. His illness had commenced some months since, shortly after relinquishing habits of intoxication, and joining the Teetotal Society. He displayed much incoherence during his sojourn in the hospital, and left it in a few days seemingly in a state of derangement.

The question seems to be undetermined, as to how far intemperate habits can safely be relinquished *at once*. The balance of evidence is certainly in favour of the attempt proving successful; although the above case, and that of Burns, with the reports of some of the continental lunatic asylums, might lead to a contrary inference. I confess, however, I do not see the grounds on which the advocates of abstinence from strong liquors rush into the opposite extreme, and recommend the consumption of tea and coffee, articles which have nearly done as much to undermine the health of one sex, as the use of strong liquor has impaired the health of the other. Besides their own injurious effects, they lead to the baneful practice of opium eating. What objection have teetotalists to good table-beer, a home-made article, much more wholesome, and cheaper than tea or coffee?"

Teetotalism is certainly another of the humbugs of the day. There is, however, this excuse for it. Being got up for the uneducated classes, it must be extravagant to catch them. The fanaticism of intoxication is met by the teetotal fanaticism.

Spirit of the British and American Periodicals &c.

GANGRENA SENILIS, OR POTT'S GANGRENE.

IN the first number of a new contemporary (Edinburgh Monthly Journal of Medical Science,) Mr. Syme has published some surgical cases, of which we shall here notice the subject at the head of this paper. The gangrena senilis has been too often considered one of the opprobria of physic, as well as of surgery. It is generally fatal, under the ordinary treatment of stimulants, nourishing diet, and opium. The age of the patients, the circumstance of the vessels having been often found ossified, the great debility of the subjects, and other circumstances, have naturally led practitioners to adopt the stimulating treatment; but it has not been successful, and Mr. Syme has, we think with much judgment, tried a very different practice.

"Although the local soothing plan advocated by Mr. Pott alleviates the patient's sufferings and delays the progress of the disease, it never, in any instance that has fallen within my observation, proved sufficient to arrest completely the morbid action. In order to attain this more important object, it is necessary to lower the tendency to excitement throughout the system, by enforcing a strictly vegetable diet, abstinence from every sort of stimulant, and the maintenance of perfect quiet in the horizontal posture."

Mr. Syme is aware that this plan is likely to meet with opposition, both from patient and practitioner, as it runs counter to the prejudices of the one, and the theory of the other. But, in cases so avowedly hopeless, it is our duty to abandon established routine, when it is found to be so generally ineffective. We shall abridge the first case which Mr. Syme has adduced.

Helen Byres, aged 57, but appearing very much older, was admitted into the hospital, 28th January, 1840, complaining of severe pain in her left foot, especially the great and little toes. The instep was red and somewhat swelled—little toe black, and great toe of purplish dark colour. She attributed her complaint to exposure to cold, and the pressure of a shoe. She had been a week in hospital before Mr. Syme's notice was attracted to the case. During that time she had wine, nourishing food, &c. but the malady progressed.

"Having ascertained the nature of the complaint, I did not hesitate to order a strictly farinaceous diet, water for drink, and a simple poultice for the foot. The symptoms then gradually abated, and the patient, instead of sinking under the united effect of disease and weakness, as she had previously threatened to do, acquired additional strength, and greatly improved in her appearance. In the beginning of March the little toe separated at its metatarsal joint, and about three months afterwards the great toe did the same. The sores healed kindly, and presented on each side of the foot a no less seemly cicatrix than if a skilful amputation had been performed. The starving plan was then abandoned; and the poor old woman, after subsisting on bread and water for upwards of four months, was allowed the usual diet of the hospital."

While we assent to Mr. Syme's experiment of treating the gangrena senilis, or gangrene of Pott, we must say that the case above narrated does not appear to be a severe example of the disease, but rather one of chilblain, or frost-bite, in an aged, weakly, and bad constitution. The following passage is worth extraction, as most surgeons must have met with examples of the same kind.

"In illustration of the treatment which it is my present object to recommend, may be mentioned a case by no means rare in private practice. The patient is usually a man in easy circumstances, somewhat addicted to the plea-

tures of the table, and beyond sixty years of age. Without any warning he observes a small pimple on his leg. It opens, and leaves a small sore, which, instead of healing, becomes covered with a slough, generally of a black colour, but sometimes white. The surrounding skin now inflames to a small extent; pain gradually increases, and is felt most severely at night, so that sleep is disturbed or prevented. The system then becomes seriously deranged, and the local affection still increasing, there is no limit to the morbid process except death itself.

The tendency to mortification in this form of disease, just as in that so well described by Mr. Pott, leads practitioners to the employment of invigorating measures. And I have uniformly observed, that whether the patient was stimulated by an additional allowance of food and wine, or was permitted merely to continue his ordinary diet, the sloughing action prevailed in opposition to every sort of soothing application that could be tried locally. But when the starving plan was adopted, and the patient restricted to vegetable articles of support, the redness has quickly disappeared, the pain has gradually decreased, and the sloughs, ceasing to extend, have been detached from a subjacent healing surface of granulation, which before long formed a sound cicatrix. The only means employed on such occasions, in addition to the vegetable regimen, have been linseed poultices, and the muriate of morphia given freely, either solid or in solution, so long as the nocturnal pains continued. It may be added, that no inconvenience has ever been sustained, to my knowledge, either from adopting the spare system, or resuming the ordinary one, even when the age of the patient was beyond eighty years."

We return Mr. Syme our thanks for this useful and practical hint. Other cases will be noticed in our Clinical Review.

LARYNGISMUS STRIDULUS.

Dr. Henderson, of Edinburgh, has written a paper in the first number of our new contemporary, (*Ed. Monthly Journal*), on the above subject, chiefly as a critique on the late Dr. Ley's work on the same subject. It is unnecessary to notice Dr. H.'s criticisms, as very few practitioners in this country look on Dr. Ley's theory as more than an ingenious physiological romance. The following fact is interesting.

A female, aged 52, was admitted into the Infirmary, 27th August, 1839, who had become affected with a cough and difficulty of breathing, five weeks previously, after working in a damp place. The dyspnoea had increased three weeks before admission, with pain in the front of the neck. At the time of admission the respiration was stridulous, with prolonged inspirations—pain on pressure in the throat—barking cough—scanty expectoration—pulse 106, and small. Twenty-four leeches to the neck. 28th. The breathing is calmer, but of the same character—painful deglutition—pulse 144. Venesection to sixteen ounces. Calomel and opium. 29th. Blood buffed—dyspnoea increased. Tracheotomy, was performed by Mr. Syme, with immediate and great relief. She lingered till the 5th September, when she expired.

Dissection.—A considerable quantity of thin puriform matter was found infiltrated into the cellular tissue behind the pharynx and oesophagus, and along the inner aspect of the carotid arteries, enveloping the recurrent nerves of both sides, so that the whole cellular tissue in front of the vertebræ, behind the oesophagus, and between the sheaths of the carotids, was occupied with pus. The larynx was sound; so was the trachea, and neither of them was compressed by the effused matter. There was some purulent effusion in the lungs.

"That the difficulty of inspiring in this case resulted from an obstruction in the glottis, is abundantly evident, both from the descent of the larynx at every attempt to expand the lungs, and from the relief which followed from the opening of the windpipe. That a rigid contraction, or spasm, of the laryngeal muscles was the immediate cause of this obstruction, is proved by the circumstance that expiration was not entirely unobstructed, as appears from the noise emitted from the larynx during the passage of the air outwards, an occurrence which is the reverse of that which happens when expiration is free, as in the case of paralysis of the muscles of the larynx; and it is also further proved by the nature of the cough, and by the acuteness of the voice."

OPERATIONS FOR STAMMERING.

The surgical cure of squinting has been followed by the still more extraordinary operation for stammering. We shall, on the present occasion, merely place before our readers the two following articles, to which a third might have been added from the pen of Mr. Bennett Lucas, who performed the operation in question, and with apparent success, at the Free Hospital, Greville Street.

STAMMERING.

To the Editor of the Medical Gazette.

SIR,—I beg to submit to your notice a brief statement of my recent proceedings relative to the cure of stammering, premising that I am at the present time actively engaged in collecting materials for a more lengthened explanation of my views upon the subject.

In the practice of my department of the profession, it has been usual with me to explore the condition of the mouth and pharynx in every case of deafness committed to my care. I have thus discovered that a large number of patients suffering from deafness are affected with enlargement of the tonsils and uvula, and an irritable condition of their investing membrane and the pharynx generally. It has been my constant practice, when I have considered these states at all contributing to the imperfection in hearing, to remove either the tonsils or the uvula, or portions of both, according to the nature of the case, with the most marked and immediate benefit, as far as the hearing may have been concerned. In December last it occurred to me to operate in this manner on two patients. They were, at the time of treatment, so deaf, that I did not then address my questions particularly to them, but to their parents, so that I was unaware of any impediment to speech in these instances. Some time after, as the cure of deafness advanced, I learned from the parents that both children had been stammerers from infancy, and, as much to my surprise as gratification, that the cure of stammering had ensued immediately on the excision of the tonsils. At the time at which I write, the subjects of both these cases remain free from any impediment, though their stammering previously to the operation is represented to me as having been very decided. I had before this remarked that persons with enlarged tonsils were affected with thick and imperfect speech, for which I had often, during the last year, practised excision with the happiest effect, in restoring the voice to its original clearness. Since the cases above-mentioned, I have operated on upwards of forty persons, all of whom have immediately felt themselves relieved of their impediment. Many have seemed wild with joy, or have shed tears of pleasure, at the instantaneous restoration they have enjoyed. After the operation, the difficulty of speech which remains is referred

by the patient to the lips; they express themselves entirely free from the original difficulty. Something must be allowed for the long misuse of the organ of voice, and the existence of habit, in rendering the voice less perfect than in the natural state. In fact, after their relief, patients have yet to learn the proper use of the vocal apparatus.

I have performed the operation by means of a scalpel, tenaculum, and scissors, without any serious hæmorrhage, and with a small amount of pain, which has appeared somewhat greater in the case of the uvula than the tonsils.

In reflecting upon the subject, the explanation I have at present to offer is, that to produce stammering, the dorsum linguæ, the palatine arches, velum palati, and uvula, approximate together so completely, and perhaps irregularly, as to leave no room for the expulsion of air from the larynx. In a person who stammers, no air issues from the mouth during the abortive effort to speak; but it does so as soon as the patient is relieved from this state, so as to produce sound. The most violent contractions of the abdominal muscles can be seen attempting to force up the diaphragm and expel the air; sometimes all the respiratory muscles, and even those of the body generally, are thrown into violent spasmodic action, as the individual grasps some near object to assist the expulsive effort. In some cases, when there is nothing abnormal about the tonsils or uvula, I find a great congenital narrowing of the entrance from the mouth to the pharynx.

I submit that the operation, which I believe I am the first ever to have proposed or performed specially for the cure of stammering, relieves this malady by making, as I excise the tonsils or uvula, an opening in the valvular obstruction I have described as being formed by the joint agency of the tongue, palatine arches, and soft palate. You will perceive that the principle of my operation is quite different from that ascribed to M. Dieffenbach, and since practised, it is said, with success in France, by MM. Amussat and Phillips, and in this country by Mr. Bennett Lucas. This operation appears to me to rest upon the principle that the tongue is chiefly concerned in the production of the voice; whereas, I would inquire, does not this organ rather serve to modulate the voice after it has issued from the pharynx, &c. while in stammerers it is the fresh production of sound which creates the difficulty, rather than its subsequent modulation?—I am, sir,

Your obedient servant,

29, Sackville Street,
March 9, 1841.

JAMES YEARSLEY.

AN ACCOUNT OF DIEFFENBACH'S NEW OPERATION FOR THE CURE OF STUTTERING.—(With Case.)

To the Editor of the Medical Gazette.

SIR,—We have lately read, in the daily papers, several paragraphs from correspondents, concerning a new operation for the cure of stammering. The French papers have likewise furnished us with accounts of it. But it seems that the English journalists merely copied the French, who obtained their information from the German daily papers, which, indeed, stated the effect of the operation correctly, but described the manner of performing it very imperfectly, and without entering into the particulars at all, as I found on reading them three or four weeks since. The same remark has been made by M. Velpeau, in a discussion which took place at the Academy of Medicine on the 16th of February. It is, therefore, not surprising that the English and French journals should describe incorrectly the nature of the operation, and the manner of per-

forming it, as practised and originally proposed by its discoverer. It is to that bold and distinguished surgeon, Dieffenbach, who lately enriched surgery with that beautiful operation for strabismus (which I first performed in Great Britain, as is decisively evident from my publications, and the testimony of several periodicals,) that we are again indebted for the discovery of a cure for stuttering. On the 22d of last month I received from my friend, Professor Dieffenbach his memoir on this subject, as addressed to the Institute of France, and dated the 31st of January, 1841. From the information obtained from this source I was enabled to perform this new operation according to the rules laid down by him, an account of which operation, as well as the leading points of the professor's letter to the Institute, are laid before the profession in the following paper; and if you can find room for it in the next number of your valuable journal, you will greatly oblige, sir,

Your obedient servant,

19, Golden Square,
March 9, 1841.

AUG. FRANZ, M.D.

Professor Dieffenbach says, in the above-mentioned memoir, that "the infirmity of stuttering had long engaged his attention, but its probable cure suddenly occurred to him while a patient who had come to him to be operated on for strabismus addressed him with stammering accents. He was led to the idea of removing this impediment by an operation, from observing that the nervous twitchings of the eyelids, and spasms of the muscles of the face, which frequently accompany squinting, immediately disappear after the division of the muscles of the eye. He had frequently seen that by dividing the *frænum lingue*, in cases where it was too much tied down, as also by other operations on the tongue or on the soft parts situated at the back of the mouth, some improvement was obtained in those cases where there was a slight hesitation in speech, but never in actual stuttering. He therefore reasoned that in this infirmity the disturbance in the mechanism of speech must originate from a dynamic cause; viz. from a spasmodic state commencing in the trachea, but more especially in the *rima glottidis*, from whence it extends to the tongue and the muscles of the face and neck: consequently he came to the conclusion that an interruption of innervation in one of the parts affected might be followed by an alteration of the nervous influence, and therefore by a suspension of the disturbance in the mechanism of speech. He thought that this alteration would be most certainly obtained in the nervous action of the vocal organs, by dividing the root of the tongue right across, and through its whole thickness; for doing which he has proposed three different methods:—

- 1st. The horizontal transverse section of the root of the tongue;
- 2d. The subcutaneous transverse section of the root of the tongue, with preservation of the mucous membrane;
- 3d. The horizontal transverse section of the root of the tongue, with excision of a portion in the form of a wedge.

The Professor has operated in two cases according to the two first and more easy methods, but finding that although the patient was able to pronounce a few words without stammering immediately after the operation, yet on its recovery the impediment was not entirely removed, he does not speak in such high terms of these as of the third method. According to the latter he has performed fourteen operations: the earlier cases, he states, are perfectly cured not only of the stammering but also of the spasmodic contractions of the muscles of the face, neck, and thorax, and the latter cases promise an equally favourable result. He therefore pronounces this method of performing the operation, notwithstanding its severity, as far superior to the two former, 'since by cutting out a transverse portion of the tongue the alteration of the nervous action on the vocal organs must be more decided; the tongue likewise becomes shortened,

and its tip turned upwards, which latter circumstances has always been considered as contributing materially to the removal of stammering.'

The Professor further hints, that 'in selecting a case for this operation, the greatest circumspection is required; that in the execution of it, great dexterity and quickness are necessary, on account of the situation of the tongue, and the enormous hæmorrhage which of course takes place: and that in the after-treatment peculiar care is to be observed. If a strict attention is not paid to these circumstances, this operation, which inflicts so great a lesion on an important organ, may either be followed by destruction of the tongue, or even by loss of life.' The first operation for the cure of stuttering was performed by the Professor on the 7th of January, 1841, on a young gentleman 13 years of age, and was followed by a perfect cure. In this case, he excised a piece, of the shape of a wedge, from the root of the tongue, being three-quarters of an inch at its superior part, and extending through its entire thickness. I shall not enter here into the details of the operation, as they will be seen from the following case, operated upon by myself, according to Dieffenbach's third method.

Case.—George Read, 17 years of age, of a strumous habit, but otherwise strong and healthy, except an herpetic eruption upon the lips, with which he has been afflicted some time. His parents, brothers, and sisters, were not afflicted with any impediment in their speech, neither was the patient so up to his father's death, which took place eight years ago, and made such an impression on his mind, that immediately after its occurrence he began to stutter. This infirmity, according to his mother's account, has gradually increased up to the present time; so that now he is scarcely able to speak, even to his own family, without great hesitation, though composed and free from excitement in mind and body. He, however, succeeds best in expressing himself by singing in a high pitch what he has to say. When he is in the slightest degree agitated, he can with difficulty stammer out one or two words only, and then his speech becomes convulsively interrupted, and, ultimately, entirely stopped; but when in the least excited, if he attempts to address a stranger, speech entirely fails him. When he first called on me, with his mother, his countenance exhibited the utmost degree of melancholy, the result of this trying calamity. His palate is highly arched, and rather narrow; his tongue could be well raised, and freely moved in the mouth. He aspirated all the vowels, and pronounced them thus—h-h-h-a, whe, whi-hi, who-h-o-o, whu-h-u-h-u; consonants whose pronunciation commences with a vowel, he pronounced thus—hhell, hheff, hhesa, &c.; the other consonants he pronounced with more or less difficulty; but d, t, b, and p, he could not pronounce at all. When he attempted to speak, he thrust his head forwards; moving it from side to side; his lips were drawn together, and protruded; and the muscles of the mouth, at the same time acting convulsively, drew them in every direction. The *alæ nasi* moved as in a paroxysm of dyspnœa. The eyes started forward, and began to water. The muscles of the face were in convulsive motion, as also those of the neck, although in a less degree. The larynx was drawn upwards. His mother informed me that, when in this state, he experienced a sensation of rigidity of the tongue, and as if it were too large for his mouth; as also of constriction of the muscles of the neck, but more especially of those of the larynx. I wished to make him speak a few words; but while attempting to do so, his eyes protruded, tears ran down his cheeks, and the convulsive movements of the muscles of his face and neck, but especially of those of the mouth, became so violent, that he was obliged to desist. During the whole time he was with me, the only word he could in any way pronounce was the word no, which he did as if written thus—h-h-a-aho-o. As he was utterly unable to answer any question, I was obliged to have recourse to his mother, as interpreter, who knew from the motions of his lips what he wished to say.

On my explaining to them that a new operation for the cure of stuttering had been tried, and had succeeded in many instances, they readily consented to have it performed, as his stuttering to this dreadful degree, almost equivalent to dumbness, rendered him exceedingly wretched in mind, incapacitated him for business, and cut him off from all intercourse with any but his relatives.

On the 1st of March I performed the operation at the mother's house, in the presence and with the kind assistance of Dr. Ure, Messrs. T. Fowke and W. Hering, who before the operation satisfied themselves of the patient's utter inability to pronounce the simplest word. The patient was seated in a high chair opposite the window; his head being held in a perpendicular position by one assistant, who, at the same time, drew the angle of the mouth backwards by means of retractors. His tongue being thrust forwards was seized by a pair of strong forceps, (furnished with teeth to prevent them from slipping,) which I gave to another assistant to hold; by these means the tongue was steadied and compressed transversely. Having seized the tongue, posteriorly to the forceps, with the thumb and forefinger of my left hand, I compressed it transversely, and at the same time elevated it; then passing a long, curved, pointed bistoury, from the left side beneath the tongue, and at the posterior half, until I felt the point at the right side with my fore-finger, I cut directly upwards, dividing the tongue right through. I now grasped the tongue in front of the wound with a pair of long forceps, armed at the point with teeth, pressed it firmly together, and with a small straight scalpel made a section from above downwards, commencing on the dorsum linguae about half an inch anteriorly to the division already made, and meeting it inferiorly; by these two sections a piece of the shape of a wedge was cut out of the tongue at its posterior half. The wound was now united by six ligatures of thick silk, which were passed in such a manner as to encircle in depth and breadth a considerable portion beyond the margin of the wound, and were forcibly drawn together in order to restrain the hæmorrhage; this was so far successful that only a slight oozing continued for a short time. That the loss of blood during the operation was very considerable is not to be wondered at, when we consider the size and number of the blood-vessels divided. The patient bore this severe operation well, but became rather faint towards the termination, and afterwards vomited large quantities of blood which he had swallowed. As soon as he had washed his mouth with a little water, I was exceedingly pleased to hear him pronounce words which, previously to the operation, he was utterly unable to articulate; such as time, powder, &c., without the slightest hesitation or stammering, and without any twitchings of the lips, or even convulsive movements of the muscles of the face or neck, and immediately afterwards I was surprised by his saying with facility and distinctness, "there is some blood running down my shirt." He was now put to bed, and desired to be kept quiet, and directed not to be allowed to speak, and to have his mouth kept cool by means of cold water. On my calling in two or three hours time I found the case proceeding favourably; no re-action had as yet taken place.

March 2nd.—The patient had slept well during the night. Some febrile action towards night; pulse 120, but skin moist. On examining the mouth I found the tongue somewhat swollen and discoloured; he complained of no pain, but only a feeling of heat in his mouth: there was a great secretion of saliva and mucus, and some difficulty in swallowing. He took, during the day, a good deal of beef-tea, and towards evening a dose of castor-oil. Was ordered to continue the application of cold water to the mouth.

3d.—He passed a very good night; was almost free from fever. The pulse had fallen to 95. Tongue rather more swollen; not painful, but thickly covered with a brown substance. To take a saline mixture every three or four hours.

4th.—Still going on well. Pulse 80. I now removed two ligatures, and found that union had taken place.

5th.—Swelling of the tongue greatly abated; but the copious secretion of saliva and mucus still continuing as before. He was now able to swallow liquids with but little difficulty, and was so far recovered as to sit up for a short time. He spoke a sentence or two without the slightest hesitation or stammering, and without any convulsive motions of his lips or face. The remaining four sutures were removed, after which, by cleaning the mouth with some water, a great deal of the brown substance before mentioned came off, leaving the mucous membrane perfectly clean and healthy; in the neighbourhood of the wound, however, it remained adhering to the tongue.

7th.—The tongue still continues clean; can be moved freely, but not without some degree of pain: speaks without stammering.

9th.—Has for the first time taken a walk in the open air. The movements of the tongue less painful. The mother gives a favourable account of the progress of his speech.

Perhaps it may be as well to state that the muscles divided in this operation are the lingualis, the genio-hyo-glossi, the hyo-glossi, and the stylo-glossi.

I think, previously to undertaking this operation, we ought to consider well whether the nervous system of the patient is sufficiently strong to stand so severe a shock—whether he will, from age or constitution, be able to bear so considerable a hæmorrhage as that which is here inevitable; and it would be advisable likewise to ascertain that the heart and large blood-vessels are in a healthy state. The further remarks I had purposed to make on this important operation will be appended to another paper, in which I shall, on a future occasion, communicate to the profession the final result of the above case, as also the first and second methods of performing Dieffenbach's operation for stuttering, which I have not yet described. But I cannot conclude this account without returning my thanks to my friends, who took great interest in this case, and kindly assisted me through it.”*

PROTRACTED GESTATION.

In a communication of some “cases in legal medicine” to the American Journal of the Medical Sciences, by Dr. Beck, we find the following.

Case.—Mr. and Mrs. G—— are Polish exiles of excellent education and morals, and highly esteemed among their acquaintances.

Some time in February, 1840, Dr. Manley was requested to take charge of Mrs. G., as she expected to be confined about the 10th or 15th of April ensuing. She had previously been his patient, having treated her for hæmoptysis. On the 7th of April, however, he was sent for to prescribe for another and violent attack of the same complaint. She was bled twice largely, kept on a low diet, absence from all stimuli, even light, &c., for about three weeks, in the hope that her daily expected confinement would be her chief security against the ordinary consequence of her disease, viz. consumption. The treatment was successful, the cough and hæmorrhage ceased, but the parturient effort was deferred until the 29th May.

This circumstance created much surprise and anxiety in the minds both of her friends and her physician. The latter, upon close inquiry, satisfied himself of

* Med. Gazette, March 12, 1841.

the following facts. 1. Her husband had left her on business on the 13th of July, 1839. 2. He did not return until the last of November. 3. During the first three months of pregnancy, she was twice unwell or menstruated, but as she was 39 years old, and had borne six children, and the amount was trifling, she, in place of deeming herself pregnant, thought it furnished evidence of the approaching cessation of the function, and particularly as the ordinary accompaniments of previous pregnancies, viz. sick stomach, toothache, &c., were altogether wanting; but 4. On the 30th of November, she felt quickening, which, allowing four and a half months for the mean time of the appearance of that sign, made her reckoning for the 15th of April correct. 5. On the nights of the 12th and 13th of December, she was attacked with hæmoptysis, for which Dr. Manley treated her by bloodletting and the negation of stimulants and nutrition, and was successful. The occasional hæmorrhage continued however for nearly three weeks. 6. On the 7th of April, as before observed, she was again seized and treated successfully. This was a violent attack, and the treatment was carried to a greater extent than before.

"About the 16th of April, having occasion to leave home, I put the patient under the care of my friend Dr. Duvall, in whom I could place the utmost confidence, believing that she would be confined every hour, as she complained of pains, which I presumed were premonitory, though not parturient. When I returned after an absence of three days, I found things as I had left them. She complained of much uneasiness in *perinæo*, and told me that Dr. D. had ordered an enema, which could not be administered from inability to insert the pipe of the instrument; said that she was sitting upon the child—that if she got up and again sat down, she felt unpleasant, as if something was pressed upwards. About the first of May, so much anxiety was manifested by her friends, that without my knowledge, Dr. S. was requested to visit her, and after examining into her condition, was sufficiently satisfied to pronounce that she was not pregnant *with a child*, although she might have hydatids or a mole *in utero*. As soon as I was informed of this opinion, I lost no time in satisfying myself concerning her condition. I made a thorough examination by auscultation and the sudden application of the cold hand to the abdomen. The result was such as could not deceive, and I pronounced her pregnant and near delivery, which might take place within two hours, as the head of the child rested, I may almost say, on the *perinæum*, and the *os tincæ* was dilated larger than a dollar. The head was so wedged, that every attempt to pass by the side of it produced excessive pain, although the patient complained of nothing but pain in the pelvic region. This particular examination was made about the 6th or 8th of May. She continued in this state, enduring more or less pain every day, till the 29th, when she was happily delivered of a son weighing 9½ pounds."

There was nothing peculiar in her parturition, except that it was a forehead presentation, and the cord was so convoluted, and entangled the child so much, as to leave but seven or eight inches of its length, being twice round the neck and once round the abdomen. When the waters burst, they came away with a great deal of meconium—calculated to lead to the impression, that there were twins in utero, and that the membranes of each had ruptured. The posterior fontanelle was obliterated, and the anterior was very small, not exceeding the size of a five cent piece. The child was remarkably strong, and the papillæ of what is denominated red gum, were in many places marked by yellow points, as is usual, when children are a week or more old. The labour was short, but excessively painful, by reason of the presentation, and the placenta was detached at the time of birth.

After inquiring—can diseases, or the treatment necessary for their cure, have an influence in protracting the term of gestation? Dr. Manley argues in the affirmative, and concludes that it appears that Mrs. G. carried her child 10 months and 13 days; but this admits of easy explanation, if we allow the treat-

femoral veins seemed to be open. At night some hæmorrhage apparently from it. On the morning of the 12th he died.

The os femoris was in a state of necrosis up to the epiphysis formed by its head, and by the trochanter major. On being opened with a saw, a darkish serpentine line indicated the demarcation of the previously dead part ; and the cells of the latter appeared to have undergone a limited suppuration. The bone being struck on its head, before it was sawed open, emitted a hollow sound. Some pus was found in the hip joint, the synovial membrane of which had a dark appearance. The anterior half of the cartilage of the os femoris was thinned by absorption apparently from the surface, which may have been done by the contiguous synovial membrane which covers the capsular ligament, as the cartilage from the fixed position of the limb had been, probably, since the original accident in contact with the synovial membrane ; part of the cartilage in this region of the bone was entirely absorbed. The capsular ligament was sound.

The femoral artery just above the place of the original ligature was converted by its influence into a cul de sac ; the bottom of which was firm, adherent, and about a line in thickness, and had a conical coagulum of bloody fibrine adhering firmly to it, about three lines long—with the apex upwards, and terminating at the orifice of a small artery, perhaps one of the external pudics. To this apex was appended a filament of the same fibrine, an inch or more long, running upwards in the canal of the artery.

Exactly where the ligature had been placed, the artery had been cut through by it, and the canal of the artery put on the appearance of a dilatation, and was continuous also with the original wound now reduced to the state of a small conical cavity. The artery was pervious from that to its inferior end. Trunk of artery thickened.

The femoral vein was open below ; a probe passed unobstructedly from its inferior orifice upwards *sine limine* into the iliac. It was enclosed, as well as the iliac and the lower part of the ascending cava in an additional coat of tenacious fibrinous matter, which made them adhere firmly all along their course to the corresponding arteries and subjacent fascia iliaca. The external coat of the femoral and iliac vein was thickened and hard ; and the internal coat exhibited the remains of strong inflammation, by its irregular slate-coloured surface, covered with a deposit of coagulating lymph. This appearance and deposit went up the ascending cava on its left side for two or three inches and there terminated in an angular manner. On the cava of this region were found some two or three plates, oval, half an inch in diameter, looking very much like the glands of Peyer in the intestines. Some lymphatic glands in a state of suppuration containing a small quantity of fetid slate-coloured pus existed in the course of the iliac vessels. No suppuration existed around the rectum and bladder.

From amongst several queries of Dr. Horner's, we quote the following.

1. " Did not the mortification ensue from its being easier, on the ligature being applied to the femoral artery, for the arterial blood to flow by the anastomoses of the obturator, gluteal or ischiatic arteries into the circumflex—thence into the sac, and return thence by the femoral vein, than flow to the foot and parts below the groin ? The freedom of this anastomotic communication with the sac was proved, by the aneurysm continuing, though the main current of blood through the femoral artery was cut off, as proved by the necropsy. Would it not, therefore, be always proper to secure in every direction the arterial trunks, primary and collateral, communicating with a varicose aneurism, so as to force the blood downwards to the limb below, and thus prevent the possibility of its returning to the vein without a complete circulation ?

2. Did not much of the extent of this mortification, at least in the thigh, depend upon the deleterious gas generated by it below, forcing itself upwards by emphysema under the skin, and between the interstices of the muscles ? In

of the perineum, the prostate is divided transversely, and the pudic artery is in great danger of being wounded on withdrawal of the instrument.

The internal pudic was wounded by the celebrated Desault, who succeeded in tying it. Deschamps, however, seems to doubt that the wounded vessel was the pudic trunk. It was wounded in one case by the late Sir Charles Blicke, where Mr. Abernethy subsequently secured it by ligature. Sir Benjamin Brodie mentions having tied the pudic in a case operated on by the late Sir E. Home. Dr. Physick of New York wounded it in his first operation, on which occasion he used the cutting gorget; in this case the artery was also tied successfully. Mr. Lowe Wheeler mentions three cases in which he had seen this accident occur—one in Paris and two in London; in the first the lithotome caché was used to divide the prostate; in the other two, Blizard's beaked knife. Mr. Crosse of Norwich, whose experience and dexterity in this operation are well known, also relates a fatal case of this nature in his own practice.

"With such cases," says Mr. Spence, "before us, we should be exceedingly cautious in pronouncing any opinion as to the accident being the fault of the operator. It is, however, worthy of remark, that in all the cases mentioned, with the exception of that by Mr. Crosse, who does not give the particulars of the operation, the instruments used to divide the prostate were either the cutting gorget, Blizard's beaked knife, or the lithotome caché; the method of using which, and the danger arising from it, I have already explained. And after mature consideration of the surgical relations of the vessel, and of the cases in which it has actually been wounded, I cannot help thinking that if the operation be performed with the knife, the staff held steady by an assistant from first to last, and the prostate divided obliquely downwards and outwards, wound of the pudic artery will be a rare occurrence indeed."

Irregularities of the Internal Pudic.—"I scarcely know of any variety which can be properly termed irregular distribution of the pudic trunk. The nearest approach to such a variety, of which I am aware, is preserved in the Anatomical Museum of the University, and is described by Dr. Monro, in his excellent work on the Pelvis. The irregularity is on the right side. The irregular vessel comes off from the internal iliac direct, passes along the lateral and inferior surface of the bladder, pierces the ileo-vesical fascia, runs along the lateral lobe of the prostate, and divides into three branches, one to the dorsum penis, and one to the crus, whilst the third runs along the membranous part of the urethra to gain the bulb. Another preparation somewhat similar is contained in the collection of Dr. Allen Thomson, professor of anatomy at Aberdeen, who kindly favoured me with a full description of it, from which the following is an extract:—"It is situated at first between the bladder and rectum, farther down it appears to be on the side of the prostate, crossing it and the membranous portion of the urethra obliquely, before arriving at the subpubic arch, and quite below the anterior true ligament of the bladder; when it reaches the subpubic arch, the artery gives downwards a considerable branch, which soon dividing into two, sends one twig into each crus penis. The artery is then continued along the dorsum of the penis as far as the glans." In a subject which I dissected lately, I found a large vessel arising from the internal iliac in common with the obturator; it then passed along the side of the bladder, and over the upper surface of the prostate; on arriving near the pubic arch it pierced the fascia immediately external to the left anterior true ligament of the bladder, and divided into three branches; one entered the spongy part of the urethra about an inch anterior to the bulb; the other two branches were distributed, one to the dorsum, the other to the crus penis. If such an anomaly as that described in either of the two first mentioned cases, existed on the left side of a person who was to undergo the lateral operation, the artery must inevitably be wounded either in opening the urethra, or on dividing the prostate. In the case which I myself dissected,

was so much hypertrophied and indurated, as seemingly to be the only tissue contained between the mucous and peritoneal coats: transverse white bands appeared to stretch from the sub-peritoneal to the sub-mucous cellular tissue, through that which formerly constituted the middle or muscular coat.

Both parents of the child were healthy, nor was there scirrhus in the family.

ON BLEEDING IN MANIA. By W. A. F. BROWNE, M.D. Superintendent of the Crichton Lunatic Asylum, Dumfries.*

Dr. Browne points out the, in many respects, injurious circumstance, *that* the early acute stage of mania is generally treated by those who have no great practical acquaintance with the disease, and who likewise labour under the disadvantage of the patient being at home, without the *materiel* of a mad-house to assist them—while those who are acquainted with the disorder receive the patient only when it is confirmed. In nine cases out of ten, when a professional man, even of eminence, is called to a case of recent mania, he orders general depletion, the liberal exhibition of the solution of tartar emetic, brisk cathartics, and cold applications to a shaven scalp. If the symptoms, and especially the violence and rapid pulse, continue, or return in unabated force, the patient is perhaps bled again from the arm, or, if not, he will be cupped or leeches to a certainty. And after these energetic measures are manfully urged for days or weeks, and the tartar emetic lustration fails in every respect, except in producing a nausea-quiet, an asylum is recommended as the last resource. By such a step, the patient is removed from the observation of the practitioner, who can neither prosecute the principles upon which he founded his treatment, nor accurately watch the consequences of what he has already done; and thus he may naturally conclude, and often does conclude, that the subsequent treatment is but a necessary continuation or completion of what he commenced, and that, in fact, he has scientifically and successfully paved the way for regulating the more advanced stages of the malady. This is a gross and grievous mistake. When a patient enters an asylum, the plan adopted agrees neither in principle nor application with that previously pursued.

Bleeding, then, is *the* one remedy, which (in Scotland) seems to be applied to every madman. *Vide* these samples.

1. A strong, sturdy sailor, rendered insane by grief, restless, vehement, but abounding in generosity and good humour, alternately the queen of British tars, and the queen-mother of heaven, and a filter. Pulse 120, full, but soft, pervigilium; had been bled. 2. M.B. a slender, nervous female, incoherent, restless, sleepless, erotic. Pulse 90, strong; bowels constipated; tongue clean and moist; had been bled. 3. G. M. suffering from religious mania, combined with imbecility, bent upon the immolation of one of his sisters; reported to have had fits; had been bled. 4. D. C. seized first with stupor, then with acute mania, lastly with dementia. Pulse 80, soft, pupil of right eye contracted, insensible to light; had been bled. 5. A. B. a clergyman whose mind had given way under excessive exertion, he having preached seven times in succession; pale, thin, nervous; had been bled. We confess that we doubt the equal extent of this sanguinary practice in England, though it is pretty general too.

Depletion in derangement seems to have the following disadvantages:—1. It materially retards the recovery. 2. It gives a tendency to dementia. 3. It is sometimes directly fatal. 4. It debilitates at a period of depression, and in no

* Edinburgh Monthly Journal of Science, No. II.

in which the artery on the right side was divided whilst the left was intact. M. Blandin admits that this vessel in many cases cannot be avoided.

"To satisfy myself more fully than I could by ordinary dissection, as to the risk of wounding the artery of the bulb, I performed the lateral operation six times during the session of 1839—40, on subjects previously well injected. In three of these the operation was performed with the curved staff and Mr. Liston's knife; in two with the straight staff; and in one with Scarpa's cutting gorget. In none of these experiments was the vessel actually cut; but in no case was there more than a few lines of substance between the anterior part of the deep incision and the vessel; whilst in one of the cases where the operation was performed with the curved staff, the artery had been just pushed up before the back of the knife, its lower surface being quite bare. From the proximity of the artery to the incision in these and many previous experiments, and from having observed in my dissections of the perineum that the artery of the bulb frequently lies little more than an inch in front of the anus, I am inclined to think that the vessel must be frequently divided in operating on the living. For we cannot well begin our incision lower in the perineum than fourteen lines in front of the anus, otherwise we are in danger of cutting into the groove of the staff through the substance of the prostate, leaving the membranous part of the urethra and the apex of the gland undivided, a circumstance which would cause great difficulty in the extraction of the stone. It may be asked, Why, then, is hæmorrhage so rare. I reply, because in most cases the vessel is divided near the bulb, at a distance from its origin. Again, in some cases the artery is small, and I have several times seen its place supplied by three or four twigs from the pudic. The frequency of wound of the bulb itself, (in which case this vessel must be wounded,) together with an instance related by Sir Astley Cooper, in which he arrested bleeding from the urethra, by cutting down upon and dividing this artery—are farther proofs that it may in some cases be cut without giving rise to profuse hæmorrhage. Indeed, I suspect the greatest risk of bleeding is where the vessel is only wounded, without being fairly cut across."

We quite agree with Mr. Spence. Nothing can be more certain than that cutting too low, to avoid the bulb and its artery, makes the operator liable to open into the staff through the prostate. This has happened to ourselves several times in operating on the dead body. On the other hand, if the incision be commenced fourteen lines anterior to the anus, what *security* can there be against wound of the artery of the bulb?

Irregularities.—"In a subject which I dissected in 1837, the artery of the bulb arose from the pudic as usual, but then passed almost directly backwards to near the anus, whence it again curved upwards to gain the bulb. I have also seen two cases similar to that described by Mr. Stanley, in which the vessel came off from the pudic posterior to its usual origin, ran immediately above the inferior margin of the triangular ligament, and then passed upwards to the bulb. It is evident that in such cases, and also where the vessel comes off from the irregular pudic trunk and runs along the membranous part of the urethra, as in the case mentioned by Dr. Monro, of which I have already spoken, this artery must be divided in the lateral operation; and the existence of these anomalies sufficiently disprove Mr. Liston's sweeping assertion, that the artery of the bulb runs no risk, whatever be its course, if the incisions be made low in the perineum."

4. *The Prostatic Artery*, arises sometimes as a distinct branch from the internal iliac, but more generally in common with the vesical, or from the internal pudic, in the first part of its course, before it leaves the pelvis. "In the great

majority of cases the vessel passes along the lateral and inferior surface of the bladder towards its neck, then pierces the ileo-vesical fascia and gains the side of the prostate, on which it divides into numerous twigs, which supply that gland and the neighbouring surface of the rectum. In such a distribution of the artery it is not likely to furnish much blood if divided; but in several instances I have seen the prostatic artery gain the perineal surface of the prostate without dividing into minute branches; and in eight of these cases the vessel was fully as large as the artery of the bulb, and would have bled profusely if divided, as it must inevitably have been in the lateral operation of lithotomy. The vessel was noticed by the older surgical authors. Douglas thus speaks of it, when describing the parts cut in Cheselden's operation—"When the prostate gland is divided near the rectum or back part of the pelvis, a large straight arterial branch can seldom escape the knife." Sharpe speaks of applying styptics to "the artery creeping upon the prostate." And more recently, Mr. Carpue speaks of "a branch of the internal pudical artery ramifying on the prostate," and states that he has known "several patients die in consequence of the division of this artery." This statement of Mr. Carpue was severely criticised by a gentleman who denied the existence of any such vessels, and who accused Mr. C. of mistaking the prostatic veins for arteries. Mr. Spence gives a sketch, which is somewhat foggy. We may add that, in two instances, in examining patients by the rectum (one was the subject of calculus,) we have felt a large artery pulsating upon the prostate. It appeared to us that the vessel could hardly escape in the lateral operation of lithotomy.

5. *The Prostatic Venous Plexus.*—It is only of late years that surgical writers have directed their attention to this subject, and even yet they do not seem fully to appreciate the dangers of bleeding from the large veins which are sometimes wounded in lithotomy. For even Sir B. Brodie, in his admirable work on Diseases of the Urinary Organs, in mentioning a fatal case of hæmorrhage from near the prostate says, "and what was remarkable, it was venous," an expression which would lead us to suppose that his attention had then, for the first time, been drawn to this kind of bleeding. Mr. Liston and Mr. Lizars, although they both notice the danger of bleeding from the prostatic plexus of veins, if wounded, seem to think that it should properly not be interfered with. I think this opinion must have reference only to the superior prostatic veins, which, commencing in the dorsal veins of the penis, form a net-work on the upper surface of the ileo-vesical fascia, and on the upper surface of the prostate. But if the plexus be moderately injected from the dorsal veins, and the perineum dissected in the manner recommended when describing the prostatic arteries, it will be found that a plexus of veins, (or in old men rather venous sinuses,) which may be termed the inferior plexus, covers the lower or perineal surface of the prostate. And it is evident that this plexus, from its position, must inevitably be wounded, in making even the most limited incision of the prostate gland. When we consider, moreover, that it communicates freely with the superior prostatic plexus, and inferiorly with the middle hæmorrhoidal veins, and remember the want of valves in these vessels, and their dilated form in old persons, I think it must be allowed, that in them at least, this plexus constitutes a formidable source of hæmorrhage after lithotomy. And of late years it has been noticed as such by Baron Dupuytren, Dr. Monro, MM. Velpeau and Robert, the last of whom has recorded two cases of hæmorrhage from this source."

Thus the artery of the bulb and the enlarged artery of the prostate are the most likely sources of serious hæmorrhage. Mr. Spence has found during his investigations, three cases of irregularity in the artery of the bulb, and eight of the enlarged prostatic artery, so that in eleven cases out of the seventy-three

subjects dissected by him, these vessels must inevitably have been wounded. These facts, therefore, are sufficient to prove that hemorrhage may sometimes occur without any fault on the part of the operator.

A very good paper.

TWO CASES OF ANEURYSM EXHIBITING THE NECESSITY OF A LIGATURE BOTH ABOVE AND BELOW THE TUMOUR. By W. E. HORNER, M.D. Professor of Anatomy in the University of Pennsylvania.*

CASE 1.—*Aneurysm from Venæsection—Ligatures above and below the Tumour—Cure.*

Miss B., of Georgia, *ætat.* 8 years, being exceedingly ill in March, 1837, was bled by a physician in the left arm, at its bend. Nothing unusual at the time was perceived, but in a week afterwards, she felt a small pulsating tumour, the size of a pea: it continued to increase, and she was brought by her parents to Philadelphia, and placed under the charge of Dr. Randolph, who called Dr. Horner into consultation.

At this time, September 27th, 1837, the tumour is about the size of a large filbert: has a strong pulsating motion which may be felt vertically; laterally; and also when the arm is bent, and the tumour pulled up from it. Pressure diminishes its size to one half; it then remains hard and unyielding. Pressure on the brachial artery arrests its pulsation. There is no thrill or purring noise as in varicose aneurysm; the vein which was opened at the point of bleeding, is not visible.

On the 29th of September, an operation was performed by Dr. Randolph, the course of the blood being regulated by a tourniquet on the arm. The skin was slit up for two or three inches in front of the tumour, which exposed the tumour beneath the fascia of the arm and the aponeurosis of the biceps; these being dissected through, the tumour was laid bare by continuing the dissection over its surface, so as to exhibit the brachial artery and vein both above and below it. A ligature common to the two vessels was then carried under them, above the aneurysmal tumour; it, upon trial, was found to control the pulsations of the tumour; it was then fixed, and the aneurysmal tumour cut open. Upon slackening the tourniquet, blood issued from the tumour freely; a ligature was then fixed upon the artery and vein below the tumour; upon loosening the tourniquet again, blood flowed from the tumour, but not so freely. The tumour was now detached still more from its bed; a knife-handle passed under its middle, and along it, one ligature conveyed above, and another below; these ligatures were directed in such a way as to insulate the tumour completely, by being tied above it and below it; the one below being drawn first was found to restrain the bleeding completely, but to make every thing secure, and to put the disease beyond any possibility of recurrence, the upper ligature was also fixed.

The vein which probably was the one that had been bled was seen in front of the sac adhering closely to it; it appeared to be almost obliterated below, and was very small above. There was nothing like a varicose state perceptible in it; so that if it had really been punctured, the wound had healed.

The sides of the tumour were very thick, and indurated, which will account for its not being entirely flattened or collapsed by pressure before the operation, and there was no coagulated blood. Whether it was formed by a dilatation of the artery, or by a cyst on its side, was not ascertained, from the obscurity of the parts during the operation.

* Ibid.

The tumour sloughed off kindly in this case, and the wound healed by the 20th of October, the recovery being perfect.

We cannot help thinking that an operation might have been dispensed with in this instance. We treated one quite like it by compression with success. A small circumscribed aneurysm of the brachial artery may in a great many cases be so cured. The operation is severe, and should be avoided if milder means will answer.

CASE II.—Varicose Aneurysm of the Femoral Artery.—Operation followed by Mortification of the Limb and Death.—Col. P., of Florida, ætat. 30, stature 6 feet 2 inches, usual weight 170 lbs., while engaged in the service against the Seminole Indians, was wounded, April 15th, 1837, by a ball accidentally discharged from a pistol which he wore under his waistcoat. The ball was rather larger than a buckshot (say 80 to the pound.) It entered the left thigh two inches below, and a little within, the anterior superior spinous process of the ilium, and ranging very nearly in a line with Poupart's ligament, came out on the inner side of the thigh a little below the scrotum.

There was profuse hæmorrhage, estimated at from 8 to 12 pints;—the patient fainted immediately and continued insensible till the next day. An extreme swelling of the thigh followed—numbness and irregular sensations, with some slight bleeding at intervals afterwards.

July 8th, 1837. The left thigh has a strongly pulsating tumor just below Poupart's ligament, and in the course of the femoral blood-vessels; the tumor appears to be two or more inches in its transverse diameter, length not so discernible; its pulsation is arrested by pressure on the femoral artery above; also, by pressing on the artery at a point corresponding with the track of the ball, and where there is a sensation imparted of a hole in the artery; the femoral vein feels enlarged as it goes under Poupart's ligament, and has a pulsation in it. The superficial veins of the leg are smaller than usual, the saphena scarcely perceptible. To the finger the tumour has the thrill and vibratory motion of varicose aneurysm, and a stethoscope applied to it conveys a noise like that of a distant waterfall or mill race, broken in upon by a pounding corresponding with the beat of the heart, and intermixed with a loud quick purring like that of a cat going to sleep. It is extremely sensible to pressure; the extremity is useless; the patient's common position is on his back, with the thigh in a state of semi-abduction, and brought a few degrees forward to loosen the parts at the groin.

The pulse of the wrist has a short globular stroke with a very distinct interval; a very strong pulsation is felt in the epigastric region extending to the umbilicus, a feeble wavy pulsation is also felt in the right femoral vein just at Poupart's ligament. The probability is, that the latter, as well as the epigastric pulsation comes from the arterial blood flowing from the left femoral artery into the vein, and thus giving a pulsation to the ascending cava and its branches. The patient was in a state of considerable emaciation, but in good spirits.

On the 11th, the femoral artery was tied immediately below the ligament of Poupart by Dr. T. Harris, assisted by Dr. Horner. The pulsation immediately ceased in the tumor, the epigastric pulsation also ceased, and that of the femoral vein of the other side; the pulse at the wrist made a longer and more sustained stroke.

The afternoon and evening were spent in high excitement and restlessness from violent pain flying to different parts of the limb and hip and finally settling in the incision, where the sensation was that of every thing tearing to pieces. The temperature of the limb was very low. The limb mortified below a line drawn obliquely six inches above the knee. On the 18th the mortification stretched beyond its previous boundaries, and advanced up the thigh. On the 20th, it was within a few inches of the groin. Then the scrotum was affected, and soon the gangrene reached the anterior superior spine of the ilium. On the

26th, the thigh was cut off through the mortified part, to diminish the fætor, &c. On the 30th the mortification seemed definitively arrested. It did not extend so high in the interior as on the surface of the limb.

On the 2nd of August, the ligature was cut away from the femoral artery, it being now the twenty-second day. "A whitish spherical tumor, an inch and a half in diameter, extremely sensible to the touch, but without pulsation, and which I had observed for a day or two, now attracted my attention particularly. I felt doubtful whether it was the aneurysmal tumor; a cyst containing matter; or a tumor formed on the course of the anterior crural nerve."

3rd. "Determined to explore the character of the tumor which had obtained our attention, I began to dissect from it the mass of mortified muscle at its inner side, and then made a puncture into it; a flow of arterial blood immediately followed. I passed my finger into the orifice to check the hæmorrhage, and to obtain time for reflecting on its cause and the mode of proceeding. My first idea was, that I had acted prematurely in taking away yesterday the ligature from the femoral artery; but from this scruple, I was relieved by ascertaining that pressure on the femoral artery did not stop the bleeding; consequently, there must be a collateral supply of blood. I then determined to explore the whole circumference of the tumor, and to surround it in every direction with ligatures; with that view, I cut through an isthmus of living matter, in front of the femoral vessels, consisting principally of fascia, and some adhering cellular substance. On doing which, it became clear that the tumor was aneurysmal, and that the disease had returned. I also perceived a very thin cul de sac, hemispherical, and half an inch in diameter, connected with the aneurysmal tumor and pulsating strongly. In the manipulations of the sac this tumor burst and bled freely. I then proceeded in tying in masses every thing connected with the sac, in consequence of my finding the structure so altered, and so many vascular connections of the sac, that the ordinary arterial arrangement was much modified, if not radically changed. I put ligatures above in the line of the femoral artery, another in the direction of the os femoris; another in that of the pubes, and another between the most posterior face of the tumor, and the trochanter minor. The latter being done according to the suggestion of Dr. Goddard, who, during this time held the aneurysm in a state of compression which arrested the bleeding, and saved us from the distress of seeing our patient die on the spot.

These events were attended with a flow of blood from the original seat of the operation, and I then supposed that the artery had ruptured at the spot where its ligature had been, but when all the new ligatures had got their position, this bleeding ceased, so that the probability is, it came from a retrograde instead of a downward current of blood, and which was proved in the dissection after death. The obscurity of the vascular connections of the aneurysm, and of its internal arrangements compels me rather to conjecture than to state it as a point ascertained, but I am of opinion that the place punctured by me first was the enlarged femoral vein; and the protuberance which ruptured was the aneurysmal sac. The principal part of the bleeding and the most rapid gush of blood was certainly from the latter; the orifice of communication between the two vessels, was, therefore, still open as it had been."

By half-past 1 p.m. the patient had lost about a gill, or more, of blood. Dr. Horner opened the stump and tied some small arteries. The patient was in a deadly state. On the 4th, he had pain in the right side of the throat in swallowing. On the 7th, drenching perspirations commenced. On the 8th, the ends of three nerves are now exposed for an inch or two and are in a state of inflammation; the sciatic; the obturator; and the anterior crural, all of which give excessive pain on the lightest touch. Now a bad ulcer began on the coccyx. Pain, too, was felt in right shoulder and in the hips. On the 9th, delirium; small puddle of blood, of dubious origin, under his buttocks. On the 10th, the

femoral veins seemed to be open. At night some hæmorrhage apparently from it. On the morning of the 12th he died.

The os femoris was in a state of necrosis up to the epiphysis formed by its head, and by the trochanter major. On being opened with a saw, a darkish serpentine line indicated the demarcation of the previously dead part; and the cells of the latter appeared to have undergone a limited suppuration. The bone being struck on its head, before it was sawed open, emitted a hollow sound. Some pus was found in the hip joint, the synovial membrane of which had a dark appearance. The anterior half of the cartilage of the os femoris was thinned by absorption apparently from the surface, which may have been done by the contiguous synovial membrane which covers the capsular ligament, as the cartilage from the fixed position of the limb had been, probably, since the original accident in contact with the synovial membrane; part of the cartilage in this region of the bone was entirely absorbed. The capsular ligament was sound.

The femoral artery just above the place of the original ligature was converted by its influence into a cul de sac; the bottom of which was firm, adherent, and about a line in thickness, and had a conical coagulum of bloody fibrine adhering firmly to it, about three lines long—with the apex upwards, and terminating at the orifice of a small artery, perhaps one of the external pudics. To this apex was appended a filament of the same fibrine, an inch or more long, running upwards in the canal of the artery.

Exactly where the ligature had been placed, the artery had been cut through by it, and the canal of the artery put on the appearance of a dilatation, and was continuous also with the original wound now reduced to the state of a small conical cavity. The artery was pervious from that to its inferior end. Trunk of artery thickened.

The femoral vein was open below; a probe passed unobstructedly from its inferior orifice upwards *sine limine* into the iliac. It was enclosed, as well as the iliac and the lower part of the ascending cava in an additional coat of tenacious fibrinous matter, which made them adhere firmly all along their course to the corresponding arteries and subjacent fascia iliaca. The external coat of the femoral and iliac vein was thickened and hard; and the internal coat exhibited the remains of strong inflammation, by its irregular slate-coloured surface, covered with a deposit of coagulating lymph. This appearance and deposit went up the ascending cava on its left side for two or three inches and there terminated in an angular manner. On the cava of this region were found some two or three plates, oval, half an inch in diameter, looking very much like the glands of Peyer in the intestines. Some lymphatic glands in a state of suppuration containing a small quantity of fetid slate-coloured pus existed in the course of the iliac vessels. No suppuration existed around the rectum and bladder.

From amongst several queries of Dr. Horner's, we quote the following.

1. "Did not the mortification ensue from its being easier, on the ligature being applied to the femoral artery, for the arterial blood to flow by the anastomoses of the obturator, gluteal or ischiatic arteries into the circumflex—thence into the sac, and return thence by the femoral vein, than flow to the foot and parts below the groin? The freedom of this anastomotic communication with the sac was proved, by the aneurysm continuing, though the main current of blood through the femoral artery was cut off, as proved by the necropsy. Would it not, therefore, be always proper to secure in every direction the arterial trunks, primary and collateral, communicating with a varicose aneurism, so as to force the blood downwards to the limb below, and thus prevent the possibility of its returning to the vein without a complete circulation?"

2. Did not much of the extent of this mortification, at least in the thigh, depend upon the deleterious gas generated by it below, forcing itself upwards by emphysema under the skin, and between the interstices of the muscles? In

those cases, therefore, is it not better to open freely the integuments and even the fascia to prevent such an accident, or to perform amputation?"

9. "Ought we not, before obliterating a main arterial trunk, to spend, if it be at our option, some time in dilating the collateral branches, by pressure on the trunk itself, interruptedly applied? This salutary practice appears to have fallen into unmerited disuse."

LUXATION OF THE HUMERUS DURING A FIT OF EPILEPSY. By W. A. F. BROWNE, M.D. Superintendent of the Crichton Institution for Lunatics. Dumfries.*

"G. R., aged thirty-one, a strong and robust man, and for many years subject to epilepsy, accompanied by mental derangement, upon one occasion, immediately after the cessation of a very violent fit, but before he appeared to know what he was doing, was observed to place his left hand upon his right shoulder, and heard to moan. He suffered so much from pain, and could so ill describe his sensations, that I was sent for. I found him crying piteously, grasping the shoulder, but otherwise unable to explain what was the matter with him. The testimony of all around (and several of the patients being convalescent, were credible witnesses) proved that he had not fallen—that he had received no blow—and that, in short, there was no cause known for his present state. I caused him to be stripped, and, upon examination, found that the humerus was luxated downwards and inwards. The bone was easily reduced."

Sudden violent contractions of the pectoralis major and latissimus dorsi are said to have luxated the humerus, when it was separated from the side. An instance has also been recorded in which the lower jaw was luxated during a fit of epilepsy, and remained unreduced; and Dr. B. is informed that a case occurred many years ago in the Royal Infirmary of Edinburgh, in which, during an epileptic fit, *both humeri* were dislocated: the dislocations were reduced with great ease by Sir George Ballingall, who had charge of the patient.

SCIRRHUS OF THE STOMACH PROBABLY CONGENITAL.
By THOMAS WILLIAMSON, M.D. Edin.

The subject of this case, a male infant, died at the age of five weeks. At birth, it was plump, and apparently healthy, but a few days afterwards vomiting came on, and the matter ejected was coagulated milk. During the last fortnight the bowels were obstinately constipated, and the child seemed to be falling off considerably in flesh, till it gradually sunk exhausted. Upon dissection, the intestines were found collapsed and empty, and all the other visceral organs perfectly healthy, with the exception of the stomach, the pyloric extremity of which felt hard and indurated, forming a remarkable contrast to the soft and yielding parietes of that viscus when emptied of its contents. Upon removing the stomach, it was found that the pyloric orifice was so contracted, as scarcely to admit a small silver probe, a state which might perhaps in part account for its being nearly filled with coagulated milk. Upon slitting open the pyloric orifice, it was evident that the tissues entering into the composition of the parietes of the stomach, had greatly lost their normal appearance. The mucous coat was slightly thickened, whilst scarcely a distinct remnant of the middle or muscular tunic was observable. On the other hand, the sub-mucous cellular tissue

was so much hypertrophied and indurated, as seemingly to be the only tissue contained between the mucous and peritoneal coats: transverse white bands appeared to stretch from the sub-peritoneal to the sub-mucous cellular tissue, through that which formerly constituted the middle or muscular coat.

Both parents of the child were healthy, nor was there scirrhus in the family.

ON BLEEDING IN MANIA. By W. A. F. BROWNE, M.D. Superintendent of the Crichton Lunatic Asylum, Dumfries.*

Dr. Browne points out the, in many respects, injurious circumstance, *that* the early acute stage of mania is generally treated by those who have no great practical acquaintance with the disease, and who likewise labour under the disadvantage of the patient being at home, without the *materiel* of a mad-house to assist them—while those who *are* acquainted with the disorder receive the patient only when it is confirmed. In nine cases out of ten, when a professional man, even of eminence, is called to a case of recent mania, he orders general depletion, the liberal exhibition of the solution of tartar emetic, brisk cathartics, and cold applications to a shaven scalp. If the symptoms, and especially the violence and rapid pulse, continue, or return in unabated force, the patient is perhaps bled again from the arm, or, if not, he will be cupped or leeched to a certainty. And after these energetic measures are manfully urged for days or weeks, and the tartar emetic lustration fails in every respect, except in producing a nausea-quiet, an asylum is recommended as the last resource. By such a step, the patient is removed from the observation of the practitioner, who can neither prosecute the principles upon which he founded his treatment, nor accurately watch the consequences of what he has already done; and thus he may naturally conclude, and often does conclude, that the subsequent treatment is but a necessary continuation or completion of what he commenced, and that, in fact, he has scientifically and successfully paved the way for regulating the more advanced stages of the malady. This is a gross and grievous mistake. When a patient enters an asylum, the plan adopted agrees neither in principle nor application with that previously pursued.

Bleeding, then, is *the* one remedy, which (in Scotland) seems to be applied to every madman. *Vide* these samples.

1. A strong, sturdy sailor, rendered insane by grief, restless, vehement, but abounding in generosity and good humour, alternately the queen of British tars, and the queen-mother of heaven, and a filter. Pulse 120, full, but soft, pervigilium; had been bled. 2. M.B. a slender, nervous female, incoherent, restless, sleepless, erotic. Pulse 90, strong; bowels constipated; tongue clean and moist; had been bled. 3. G. M. suffering from religious mania, combined with imbecility, bent upon the immolation of one of his sisters; reported to have had fits; had been bled. 4. D. C. seized first with stupor, then with acute mania, lastly with dementia. Pulse 80, soft, pupil of right eye contracted, insensible to light; had been bled. 5. A. B. a clergyman whose mind had given way under excessive exertion, he having preached seven times in succession; pale, thin, nervous; had been bled. We confess that we doubt the equal extent of this sanguinary practice in England, though it is pretty general too.

Depletion in derangement seems to have the following disadvantages:—1. It materially retards the recovery. 2. It gives a tendency to dementia. 3. It is sometimes directly fatal. 4. It debilitates at a period of depression, and in no

* Edinburgh Monthly Journal of Science, No. II.

degree facilitates the operation of other remedies. 5. It is dangerous during excessive muscular action.

1. Dr. Browne has found that cases in which general blood-letting has been employed, are more intractable, more obstinately resist the effects of other means, and are constantly of longer duration than those in which another course has been pursued. He presents a table of twelve recent cases, as similar as can be expected. Such have been selected as are cured, or curable, and as have not suffered in any other way from depletion. Of the twelve, six were bled, and six were not bled. Of the six not bled, all have recovered; of the six bled, three have recovered, and three are still under treatment.

The duration of treatment is as follows :

Not bled.		Bled.	
A.	2½ months.	B.	4 months.
D.	6½ —	M.	8 —
L.	4 —	R.	16 —
W.	6 —	H.	5½ —
W.	2 —	N. ..	14½ —
P.	3½ —	D.	20 —
	<hr/> 24½		<hr/> 68

2. Dr. Browne believes that dementia more generally follows where depletion has been pursued. He is the more inclined to think so from these facts :—that even in such patients as have been bled, but are ultimately cured, a stage of imbecility approaching to fatuity separates the period of excitement from that of convalescence. Dementia follows directly and obviously great evacuations and copious blood-letting, where no symptom of alienation pre-existed. There is a case under his care where incurable dementia succeeded the loss of blood in pneumonia. Hæmorrhage is likewise a cause of the same disease. There is under his charge a lady who is subject to periodical discharges of blood from the bowels, who is weak and imbecile during the attack, but is comparatively sane when it ceases. Individuals who have attempted suicide, by cutting the throat, and suffered from loss of blood, often fall into dementia.

3. He mentions several instances in which bleeding seemed to occasion fatal exhaustion.

4. In a vast majority of the cases admitted into asylums, it is necessary to order a generous and nutritious diet. In every case where bleeding has been resorted to, a full regimen is indispensable. Unless it be given, the patient is in danger of sinking from that vague, but well-known "exhaustion," which figures so largely in the bills of mortality of the insane, and which evidently depends upon the withdrawal of that nervous influence from the organs of assimilation, which an unimpaired cerebro-spinal and ganglionic system exercise, and which is essential to healthy nutrition. Nor until the loss of strength which succeeds bleeding, and which is of course aggravated by mental anxiety, be met, can active remedies of any kind be tried. Opiates act, it is true, with greater power; but even if their efficacy were greater than it is believed to be, their influence is very limited, when compared with that of the agents which are inadmissible from the want of strength. In a London asylum, where both bleeding and emetics were used upon a grand scale, it was found that when vomiting was induced after bleeding, apoplexy frequently followed; and it is instructive to learn, that of 200 bleedings drawn at the same time five only were buffed and cupped. The strong frequent pulse, which is supposed to indicate and justify this practice, is a most deceptive symptom. It is often not characteristic of the disease at all. When present, it is much more frequently the result of moral perturbation, than of a sthenic state of the brain, or any other organ. The

constant agitation, the tremendous muscular efforts, in which the phrenzied strength develops itself, likewise contribute to keep up the pulse. The accuracy of this observation is shown by the rapid fall which takes place when the patient is compelled to take rest and repose. To bleed in such a case, in the expectation of reducing the momentum of the circulation, is vain and pernicious. To bleed, in order to subdue the violence of the mania, is more so.

5. Among the dangers may be enumerated the loss of large quantities of blood, after that prescribed has been withdrawn. This takes place from the difficulty of securing the vein, from the wound bursting forth during paroxysms of violence, and from the patient tearing off the bandages. We select two instances. 1. A medical man was largely bled during delirium, following a fall from his horse. During the night, he imagined that he was necessitated to walk out with two ladies, who appeared to stand at his bedside. In his attempt to dress, the vein began to bleed, and bled until he fainted. He passed from syncope to convulsion and died. 2. A carpenter was affected with violent suspicious mania. His friends had applied to a veterinary surgeon, who bled him profusely, and left him to the superintendence of his mother. Whenever reaction commenced he became doubly furious and unmanageable, tore the ribbon from his arm, escaped, was pursued, but continued to fly, although the blood flowed freely from his arm ; and with such rapidity did he run, as to complete, three times in succession, the circuit of a carriage passing quickly upon the road. He was literally run down. He has now sunk into a state of imbecility and hebetude so profound, that all sensibility of the surface seems to be obliterated.

Dr. Browne has never seen a case in which local bleeding was not preferable to general.

ON THE EMPLOYMENT OF OPIUM FOR ARRESTING ACUTE INTERNAL INFLAMMATIONS. By ROBERT CHRISTISON, M.D., &c.*

I. The varieties of internal inflammation which best exemplify this action of opium, when given singly, are the inflammations of the mucous membranes. Of such diseases there are at least four which may often be thus successfully treated without almost any other remedy, namely,—coryza, catarrh, influenza, and dysentery.

“As to *Coryza*,—most persons, on feeling its approach, are content to submit without a struggle to the infliction, and eschewing alike physic and the physician, let their ‘cold in the head’ take its own way. But few would do so, were they aware how easily and how agreeably so tormenting a visitor may for the most part be got rid of. For twenty years I have been accustomed to see it stopped at once by a full opiate given on the first day of its appearance. Let the patient avoid food after dinner, use liquids sparingly, take a full dose of muriate of morphia, or Battley’s solution, at bedtime, and breakfast before getting up next morning,—and he will then commonly find the secretion of the nostrils permanently inspissated, and the complaint either gone entirely, or at any rate no longer a source of particular annoyance.”

This is no new practice to us. We have occasionally employed it on others, as well as on ourselves, for many years. We have usually exhibited the compound tincture of camphor in a large dose, half an ounce, or more. But we have taken care to give a purgative next morning, and, even with that safeguard, candour compels us to acknowledge that it has occasionally disagreed. It does very often stop coryza as by magic ; but when it does not answer it may upset

* Edin. Monthly Journ. of Med. Science, No. II.

the stomach much. We cannot but consider Dr. Christison's picture as a little too gay.

Dr. C. has often seen a common *Catarrh without fever* cut short in like manner, if taken on the first, second, or perhaps even the third day. Or more generally it seems to pass at once over the intervening stages to that in which thick sputa are coughed or hawked up without labour, and without irritation in the chest or wind-pipe. *Febrile catarrh* too may be checked abruptly in the same way, if patient and physician are lucky enough to meet during the first or the second day at farthest. But here probably the next mode of employing opium is fully more successful.

In epidemic dysentery, Dr. C. believes that the cure may often be effected by opium alone, begun early and given boldly. In the epidemic of 1828, opium was given at once in the dose of one, two, or three grains every six, four, or three hours, according to the urgency of the symptoms, until signs of its narcotic action began to display themselves; and in this way sometimes twenty, or even thirty grains of opium were given in the first four and twenty hours. In several cases, where the treatment was begun not later than the close of the second day, the force of the disease was at once broken completely. And the only measures needed afterwards, were the continuance of the opium in diminished doses, and the restriction of the food to pulpy solids.

II. The method of using opium along with ipecacuan as a sedative, anodyne, and sudorific, in the early stage of acute inflammations, is probably applicable to a considerable number of diseases of the kind. Those in which Dr. C. has employed it are common sore-throat, catarrh, and acute rheumatism.

Cynanche Tonsillaris.—Dr. C. thinks that few cases may not be cut short if they are subjected to it about the close of the first, or, at all events, before that of the second day. Dr. C. relates two cases. We quote the second :—"A lady, about thirty-eight, long a martyr to cynanche tonsillaris,—which, in particular for three years before, had returned during the winter, ended in abscess of one or both tonsils, occasioned great and protracted torture, and had left chronic enlargement of these glands,—was attacked in the same way for the fourth time. When I first saw her on the fourth day of the disease, the tonsils, greatly enlarged, especially on the left side, blocked up nearly the whole throat. She spoke with much difficulty, could not swallow without long, painful, and repeated efforts, and breathed noisily and with labour. The pulse was 116; full and soft. The febrile oppression and anxiety were great. A large blister had been applied to the throat, and purgatives taken freely, but without the slightest benefit. The attack seemed too far advanced to be arrested. But as fluctuation could not be detected in the larger tonsil, Dover's powder was ordered, as in the former case. Sweating ensued; ere long warm drink could be swallowed with no great difficulty; and when the perspiration had been thus kept up for twenty-four hours, the pulse had fallen to 64, the swelling of both tonsils had materially subsided, and the febrile anxiety had ceased, together with the local uneasiness in a great measure. In two days more there was little complaint left except weakness. In the course of time, the chronic enlargement of the tonsils disappeared; and this lady, like the last, has never had another attack, though five years have elapsed since the one now described. The tendency to cynanche tonsillaris certainly seems to grow with its repetition in a severe form; and I have met with other instances besides those two, where an abrupt early cure seemed to break both the attack and the liability."

Acute Rheumatism.—"I am convinced," says Dr. C., "that, at least in young adults of sound constitution, a genuine acute attack may often be put an end to in a few days, by first drawing blood very freely to the approach of faintness,

and then giving Dover's powder instantly afterwards in the way mentioned above for inflammatory sore throat. I have often observed, that after sweating has been thus brought out and kept steadily up for thirty-six or forty-eight hours, the pulse fell to the natural standard from nearly double that rate, the white thickly-furred tongue began to clean, the pains and redness gave place to numbness and want of power, recovery went on afterwards swiftly and without interruption, and the patient was able to leave his bed in a week. The chief conditions for success are, that the bowels, previously opened if necessary, shall be let alone till the sweating is well over; that blood be drawn both largely and to approaching syncope; that the powders be given immediately afterwards, before the circulation recovers its state of excitement, which it will otherwise soon do; that the treatment shall be enforced before the close of the fourth day, but earlier if possible; and that the case shall be real acute rheumatism, not one of the subacute form, or gouty rheumatism, as it is called,—where for some days previously the local inflammation has been shifting from joint to joint, with irregularly intermitting fever. I have once or twice tried to do without the preliminary blood-letting, but have not succeeded."

III. The treatment of acute internal inflammations by opium, after blood-letting, consists in withdrawing blood very freely from the arm till faintness approaches, just as in the ordinary way of treating acute inflammations,—and then giving a large opiate, with a view to bring on sleep or the calm reverie which in some people takes the place of sleep. The result is, that, on the patient awaking, the general fever and local inflammation are found to be subdued and broken,—generally at once, but sometimes not till the repetition of the practice in twelve or twenty-four hours. Dr. Christison cites several cases. We shall only pick out one or two.

Case.—"A hewing-mason, aged 45, a broken-down man for his time of life, and subject for some years to obstinate cough in the winter, was seized with symptoms of acute *Pneumonia* in the left side. There was crepitation in the lower part of that side, rusty sputa, hard cough, hurried breathing, and a frequent hard pulse. On the second or third day, when I was first called to see him, I took away towards eight-and-twenty ounces of blood, which brought on sickness; and he then got 45 minims of laudanum. The usual effects ensued: he awoke free in a great measure of pain, cough, and difficult breathing; but his recovery afterwards went on slowly. Next winter he was tormented to an unusual extent with cough, expectoration, and shortness of breath. In the subsequent winter these symptoms recurred again severely; and ere long acute symptoms supervened, which resembled acute bronchitis rather than pneumonia, and which, after being checked for a few days by the same treatment as on the previous occasion, acquired fresh force and proved fatal. This was obviously a case of acute inflammation, superadded twice upon the chronic affection known by the name of 'mason's asthma.'" We cannot say that this case is a very encouraging one. The next, perhaps, may be deemed more so.

Case.—"A lady, about thirty years of age, and subject to dyspepsia, being loth to lose the gay season of the year, neglected for three weeks a short tickling cough, with dull aching and obscure tightness in the lower part of the left side. At length she was seized with chilliness followed by fever, acute pain in the side, hurried breathing, and more frequent, short, dry cough. I saw her within twenty-four hours, and found the pulse 110 and sharp, the respirations about thirty-six, the left side circumscribed in its movements, the lowest third of it quite dull on percussion, and without respiratory sound, the middle third somewhat dull on percussion, with unequivocal *ægophony*, and the most remarkable crackling or friction-sound attending inspiration and expiration, which I ever

heard. There was here much reason to dread chronic pleurisy, with a supervening acute form of the disease. In the evening a moderate blood-letting induced faintness; 35 minims of solution of muriate of morphia, given immediately afterwards, brought on quiet slumber; and next morning the fever and acute pain were gone, and the respiration was natural in frequency. The dulness on percussion in the lower part of the chest slowly decreased, and the crackling extended by degrees over the whole lower two-thirds of the side. This symptom continued for a week, during which every other complaint subsided; and she soon recovered completely."

Dr. Christison adds :—

"The conditions for successfully employing opium after blood-letting, are nearly the same with those for using Dover's powder in rheumatism. It is essential that the disease to be subdued be in its early stage; that a deep impression be made on it by blood being withdrawn both freely, and to the approach of faintness; and that the opium be given largely and immediately, so as to anticipate the renewal of re-action. Sweating sometimes ensues, but is not at all a necessary condition for success. The particular preparation of opium to be used is perhaps of no great consequence. I prefer the solution of muriate of morphia, or, failing that, the sedative solution of Battley. The dose of the former should not be less than forty minims for an adult male, and for others in proportion; and the dose of Battley's solution, which is certainly not so strong as its maker represents, should not be less than twenty-five or thirty minims. Some conceive this treatment applicable only to inflammation of membranous surfaces, not to that of parenchymatous textures. I do not know any positive facts either on one side or the other of this question; but the statement is doubtful, if it be meant to apply to acute parenchymatous inflammations in their early stage. If pneumonia be regarded as inflammation of a parenchymatous tissue,—which, although a common mode of viewing it, is rather incorrect,—then, there can be no doubt that in this particular instance the treatment is most effectual on many occasions."

We confess that we are of the number who think opium should be employed in acute inflammations cautiously. A valuable medicine, beyond doubt, it is, but one sadly liable to be abused. And we fear that were the plan of treating acute inflammations with it very generally adopted, we should soon have a very respectable *per contra* sheet to oppose to Dr. Christison's flattering list.

IMMOVEABLE FRACTURE-APPARATUS FOR VARICOSE ULCERS OF THE LEG.

John Grant, aged 45, of spare habit, but of general good health, was admitted into the Leeds Infirmary, Sept. 8th, 1840, under the care of Mr. Teale, on account of ulcers of the leg.

After he had been purged freely and confined to bed for two days, lint was applied over the sores, and the entire leg from the toes to the knee was enveloped in the "immoveable fracture apparatus," consisting of calico stiffened with mucilage and chalk. The material employed for this purpose is similar to that which was stated to be in use at St. Bartholomew's Hospital, and consists of a kind of pasteboard, formed by two layers of thick calico cemented together by an interposed stratum of mucilage and chalk. Two portions of this pasteboard, adapted to the form of the leg, and softened by immersion in tepid water, are applied to the leg, and retained by a spiral calico bandage, over which is spread a layer of mucilage and chalk, and afterwards a second spiral bandage.

After the apparatus had been applied eight days, a slight degree of putrid odour was perceptible, and there was some appearance of matter oozing through the bandages at the situation of the ulcers; the apparatus was therefore removed,

when the ulcers were found to be much diminished in size, the varicose veins no longer perceptible, and their thickened parietes could not be felt beneath the skin. The sores were dressed with lint, wax ointment, and a light bandage.

Oct. 9th. Ulcers healed. No return of varicosity.—*Provincial Med. and Surg. Journal*. Nov. 21, 1840.

THE UVULATOME.

A novel and most ingenious instrument, invented by Mr. John Milliken, of Dublin, for excising any portion of the uvula which it may be desirable to remove. It is a forceps having a sliding blade on the upper surface. The portion to be removed is taken hold of by the forceps, and secured by a small bolt projected by the thumb; the fore-finger then projects the cutting blade, which cuts off the desired portion in a moment, which being held by the forceps is brought out of the mouth. This instrument renders the operation an affair of a few seconds—it is simple, ingenious, and effective. The inventor of the uvulatore has, we understand, several other new instruments in progress, which we shall have pleasure in introducing to the notice of the medical public on this side of the Channel.—*Medical Times*, July 4, 1840.

DEATH FROM BRANDY AND SALT.

We are much disposed to agree with those who think it useless to legislate against quackery. When credulity can be put an end to by Act of Parliament, then, and not before, quackery can be stopped. But so long as there are rogues to promise impossibilities and fools to believe them, the charlatan's trade will subsist.

All our readers know that the dish of humbug that tickles the public taste just now is—brandy and salt. We dare say it will have its victims. Indeed here is one.

A man, advanced in years, had been the subject for many months of a tumor under the chin, for which he had received the best advice that could be procured in the neighbourhood, and was given to understand it was of a cancerous nature. He afterwards met with a pamphlet on Brandy and Salt, and soon began to try the remedy, taking it internally and *rubbing it on his head*. On the 5th of December he was attacked with hæmoptysis during a fit of coughing; and having lost a good deal of blood, he became alarmed and sent to me for assistance. When I arrived the bleeding had ceased, save an occasional streak of blood in the sputa, and his fright had in consequence passed away. I spoke to him seriously about his complaint, and was about to treat his case, when he told me he had been taking brandy and salt with great benefit to the tumor, and that he could not consent to leave it off; nor would he allow the application of any other remedial means, although I pointed out as strongly as I was able the danger he incurred by persisting in such a course. I was obliged to leave the house without doing any thing for him, but cautioned his wife (who also urged the continuance of the brandy and salt, thinking the loss of blood was some salutary discharge from the tumor, occasioned by the remedy) to watch him very closely, and not allow him to make use of any exertion. Soon after this, the patient paid his men's wages, went to bed, had a fit of coughing accompanied with another discharge of blood, and in a few minutes was a corpse.—*Proc. Med. and Surg. Journ.* Jan. 2, 1841.

POLYPUS OF THE UTERUS REMOVED BY THE HAND. By J. TOOGOOD, Esq.

In June, 1830, I visited, with a gentleman of this place, a woman between 50 and 60 years of age, who had been suffering for a long time from violent hæmorrhage from the uterus, and on making a careful examination, a polypus of very extraordinary size was discovered. It was proposed to pass a ligature around it, but the patient wished to defer the operation for a short time, and when the attempt was made it was found impracticable, in consequence of the polypus being so soft and yielding, as to render it impossible to carry the ligature over its stem. As the patient's safety depended on the immediate removal of the tumor, I insinuated my hand into the posterior part of the vagina, in the hope of being able to place a ligature around it, until I found the stalk between my fingers; I then twisted it off, and withdrew the largest polypus that I ever saw; no hæmorrhage or bad symptom followed, and in a few days the patient was quite well.—*Prov. Med. and Surg. Jan. 23, 1841.*

AMAUROSIS AND NIGHT-BLINDNESS PRODUCED BY ONANISM AND INORDINATE VENERY. By ROBERT CANE, M.R.C.S., Kilkenny.

CASE 1. *Amaurosis from Venery.*—October 5th, 1839. J. D., aged 34, under the middle size, slight, but muscularly made, countenance flushed and drowsy looking; complains of sense of fulness in the head and dimness of sight, to such an extent that he occasionally walks with his hands stretched before him to avoid being knocked, and some weeks ago he walked into the River Suir off the quay of Waterford. The pupils are broadly dilated, the left most so; iris sluggish under light; conjunctiva and sclerotica are deeply injected; is slightly dyspeptic; bowels confined; pulse 90, and nothing unusual in its character; was in Stevens's Hospital in the early part of the summer, where he was put under mercury; had blistering ointment to his head, and a seton in his neck; thinks his sight was improved by the salivation, but it was as bad as ever in a few days after; but the mercury cured severe neuralgic pains in his arms and legs, which he then laboured under. The seton in his neck fell out, and he is now worse than when in Dublin.

This man's complaint is clearly traceable to his having married three years since, and as he states it, "having used sinful means to force, and enable him to gratify desires oftener than nature wanted." The practices were omitted, and the following treatment adopted:—

Cucurbitulæ C. nuchæ appl. et mittatur sanguis ad $\text{ʒ} \text{v}$.

R. Pil. Coloc. c. gr. x. Ft. pil. ii. h. s. s.

The next day he felt much better; he continued under treatment until the latter end of November, in which time he was again cupped twice, had the seton replaced, and got aperients occasionally. He is now in the perfect possession of his sight.

There is another case, which we omit.

CASE 2. *Night-blindness from Onanism.*—May 4th, 1840. J. Q.—, aged 26, complains that he gets quite blind every evening as it grows dusk, and remains so until morning breaks; that he has been in ill health these twelve months past, but was not blind at night until about two months since; pupils natural size; iris slow under light; eyes and skin have a dull icteric tinge;

pulse 120, and feeble; feels weak, and has lost his appetite; tongue covered with a light brown coat, moist and flabby; had pain in the right side about three months back; right hypochondrium still swollen, and tender under pressure; abdomen tumid, but does not appear to contain fluid; the alvine discharges are scanty, but contain some bile; urine high-coloured and small in quantity. Has practised onanism for the last seven years, and to a frightful extent; has nocturnal emissions every night. Was directed to rub tart. ant. ointment over the right side, and to take night and morning the one-sixth of a grain of sulph. ferri, and 4 grs. of Rufus's pill, and to have porter and free animal diet. Under this treatment his general symptoms have improved; the enlargement in the right side is much lessened; the discoloration of the skin is disappearing, and he feels stronger, but the night-blindness still continues. Mr. Cane has commenced quinine with him, and he has given up his mal-practices.

CASE 3. Night-blindness from Onanism.—May 20th, 1840. J— K—, aged 18, complains he is blind at night; can barely see stars round a candle; feels weakly; but has no pain or sickness of any kind; is thin and emaciated; pupils a little dilated, and iris slothful; countenance pale; tongue moist, and, as in all those cases, morbidly soft and flabby; pulse 100, and feeble; bowels and kidneys acting healthily; admits that he has been practising onanism since he was fifteen years old; has often practised it four times daily—latterly not so often; nocturnal emissions; has felt the blindness creeping on him for the last year; sees perfectly well during the day. The treatment has been an aperient, quinine pills, and nourishing diet. He is rapidly improving; he can now see objects at night, but cannot yet see to read or work.

Mr. Cane presents us with the physiognomy of an onanist, or indulger in gross sensuality. There is, he says, a peculiar expression about the eye, partly caused by a corrugating of the lids at the outer canthus; a peculiar expression of the eye itself, a slow and stealthy mode of moving it over, and up and down an object, a language in the glance itself; while the lips are compressed and protruded, a "tout ensemble" not easy to analyze, but which the observer of human character soon becomes familiar with, and which, if his station or his profession be one permitting him to master men's secrets, will lead him to recognize a distinct order of the human family, many of whose diseases may be thus traced within a narrow compass, and to a positive source.

He believes that both diabetes and amaurosis are too often traceable to indulgences of this description.

"The first case of diabetes mellitus I ever witnessed occurred about the year 1826; that patient acknowledged to me that he dreaded onanism had caused his disease. Since then I have seen ten cases of diabetes; of that number six acknowledged onanism to its most destructive extent, one admitted it to the extent of using partially as a means to arouse passion for sexual intercourse, and the remaining three denied every thing of the kind, whether with truth I know not. But the admission of the other eight made a deep impression on my mind, and I cannot now meet with an amaurotic, or a diabetic patient, in whose case, if, after due investigation, some other cause is not discoverable, without my mind reverting to this, in my practice at least, most frequent source of disease."

We think Mr. Cane has done well to direct attention prominently to the consequences of these vices.

ON THE TREATMENT OF VARIOUS DISEASES. By ROBERT J. GRAVES, M.D.*

1. *Looseness of the Teeth.*

Among the various causes which produce looseness of one or several teeth, none is more common than inflammation of the alveolar processes and sockets. Sometimes this originates in disease of the tooth itself, or of the gums; but in other instances, the diseased process commences in the alveolar periosteum, and by spreading to the socket and gums, it gives rise to great pain, swelling, and sponginess of the latter, while it eventually detaches the fangs of the teeth implicated in the attack, from the grasp of the sockets, and thus at last the teeth fall out, though in themselves they exhibit no appearance of decay.

The progress of the disease, is accompanied by extreme pain, and as a puriform discharge oozes out from between the gums and the inflamed periosteum, many limit their attempts to local means, and often succeed in effecting a cure by frequent applications of leeches to the inflamed gum, and in very obstinate cases, by incisions freely made through the gums and inflamed periosteum. Last year a patient of Dr. Graves' was thus affected, and thus treated, and although under the care of a most skilful surgeon, and of an eminent dentist, he lost successively a left bicuspid and molar of the upper jaw. His sufferings were for a short time relieved by the extraction of each tooth, but in a few days became as agonizing as ever, when finding all the neighbouring teeth loose, and being told that they also must soon be drawn, he had recourse, in despair, to a celebrated homoeopathic doctor, whose infinitesimal doses completely failed. Dr. Graves recollected that he had successfully treated him for a periostitic affection of the sternum and ribs, and that hydriodate of potash was the medicine which served him most. He recommended him to use ten grains of it three times a day, and had the satisfaction of perceiving a daily improvement, so that pain and inflammation soon ceased, and in about ten days the teeth were all fastened.

The periostitis to which this gentleman was liable, was of a rheumatic nature, otherwise his constitution was sound, and he was only thirty-four years old.

2. *Tinea Capitis.*

Dr. Graves makes some remarks on the dry scaly form. This species of ring-worm or dry tetter, is very contagious, and sometimes makes its appearance in one or several spots on the scalp, face, or other parts of the skin, but seldom is observed on the lower extremities or abdomen. It scarcely ever remains for any great length of time fixed in any part, except the hairy scalp, where it is apt to locate itself and become permanent. Dr. G. recommends attention to the following points.

"1st. When the disease is of long standing, always insert an issue in the arm, before you attempt its cure. I have seen water on the brain, and other fatal consequences, from the neglect of this precaution.

2dly. If this disease has clearly originated from contagion, and no other evidence of derangement of the general health can be detected, we must not, from the mere presence of the cutaneous affection, infer a constitutional taint, and must avoid the common error, of making the poor children undergo a course of alterative medicines.

3dly. This affection originating in contagious matter directly applied to the skin, cannot, like some varieties of lepra and psoriasis, (to which it often bears a great resemblance,) be cured by internal medicines, such as mercury, arsenic, and iodine, given separately or in combination, as in Mr. Donovan's new preparation.

* Dublin Journal of Medical Science, November, 1840.

4thly. When it occupies the hairy scalp, the common procedure of shaving the head is injudicious, for it adds to the irritation of the skin; and the scalp can be sufficiently exposed by cutting the hair as close as possible with a sharp scissors.

5thly. The great object is to get rid of the morbid action which is going on, and which consists in an inflammation of the external surface of the corium; an inflammation occurring in spots, and giving rise in the first place to an increased secretion of epidermis, which produces the scaly appearance of the parts affected; and in the second place, to a very slight and scarcely perceptible oozing of moisture which immediately dries into scales, and thus escapes notice, being mingled with the scurf formed by the detached portions of morbid epidermis.

6thly. The cure must be accomplished by removing these scales, as far as that can be done by diligent ablation, without using any irritating degree of friction; and when the diseased portion of the skin has been thus exposed, we must next have recourse to some application which will destroy the morbid secreting surface. Formerly this was attempted by means of an endless variety of complicated formulæ, each of which had its advocates; the list may, however, be now reduced to a few simple remedies, and in truth, with nitrate of silver, sulphate of copper, or strong tincture of iodine, every case of this disease may be cured.

7thly. I never use the solid lunar caustic, or sulphate, but prefer a solution of ten, fifteen, or twenty grains to the ounce as the case may require. As to the application of this solution, it will not do to apply it, as is generally done, with a camel's hair pencil, *for it must be strongly rubbed into each spot*, for which purpose a small bit of sponge, covered with fine linen, and tied to the end of a quill or slender stick, should be employed. When a large portion of the scalp is affected, it will require some perseverance to apply this lotion in an effectual manner.

8thly. An application of this nature, when effectually done, must not be repeated oftener than once a week.

9thly. Immediately after it the whole scalp must be covered with a spermaceti dressing, and the spermaceti must be renewed at least four times daily, so as to keep the head constantly moistened with it. The head is not to be washed for three days after the application of the caustic, or of the tincture of iodine, but then it may be well but very gently washed with yellow soap and water twice a day, taking care to cover, as before, with a spermaceti dressing after each washing.

In scaly diseases of the skin, it is quite surprising how much the cure is facilitated by keeping the affected parts constantly smeared with spermaceti, oil, melted suet, or even candle grease. Without this aid, the use of caustics will often disappoint the practitioner.

10thly. When the above precautions have been taken, the cure will advance rapidly, and each succeeding application of the caustic solution, or of the tincture, may be less severe."

3. *Hydriodate of Potash in Sciatica and Lumbago.*

"I first became acquainted with the remarkable efficacy of this medicine in lumbago and sciatica, under the following circumstances. In the memorable wet month of July, 1839, I was called out of bed at midnight, to visit a lady in the country, and the vehicle sent to convey me was a hack covered car. The cushions were very damp, and I had not proceeded half a mile, before I was attacked with lumbago, so severe, that I could scarcely walk when I arrived at my patient's residence. Next morning I was better, having perspired much during the night; but still the pain was troublesome, and as the season continued unusually cold and wet, (indeed it scarcely ever stopped raining from the 8th of July, 1839, to the 19th of February, 1840,) and as my duties exposed me much to the weather, and prevented me from giving myself the necessary rest, my lumbago continued to increase again, and in about a month, the gluteal and sciatic nerves of the left side became engaged; I noted particularly, that the

pain spread very gradually downwards from the lumbar region, so that it took a week or ten days to arrive at the ham, and a still longer time at the ankle; I was then quite lame of the left leg, suffered much from pain in bed, and had become so helpless, that I had to get my servant to draw on my stockings; during all this time my general health was perfect; appetite good; digestion regular; and no deviation of the urine from the natural appearance. I mention this, because several of my medical friends advised me to take antibilious aperients, an advice founded on Abernethy's doctrine, that many local affections proceed from stomach derangement. I was at last forced to try something for my relief, and had myself cupped, and tried the warm douche and Dover's powder, but without any good effects. I began now to fear, that I should be forced to give up all professional business, and confine myself to the house for many weeks in order to go through a mercurial course, combined with proper topical applications, when happening to meet Mr. Ferguson of Kildare-street, he recommended me to try hydriodate of potash, of which he was good enough to send me a drachm dissolved in a pint of decoction of sarsaparilla. I took quarter of this daily, and may literally apply here the common phrase, that I felt each dose do me good; in truth the benefit I derived was perceptible hourly, and was so rapid, that in four days all traces of the lumbago were gone, and my lameness had quite ceased. I did not take more than one bottle, i. e. one drachm of the hydriodate, but the good effect continued after I had ceased taking it, and in less than a week, I was perfectly well. Subsequent experience enables me to recommend this medicine strongly, in subacute and chronic lumbago and sciatica.

It is right to observe, that the remedy had in my own person to work against various disadvantages, for I neither relaxed from my labours, nor refrained from eating and drinking as usual. This is only another example of the many I have met, which prove how injudicious it often is, to seek the cure of local inflammations by means of lowering the whole system."

INOCULATION AFTER VACCINATION.

Dr. Blennerhassett, of Tralee, has communicated to the Dublin Journal a paper on Small-pox after Vaccination, from which we are tempted to extract some rather curious particulars.

About the autumn of 1835, the small-pox was introduced into Dingle and the neighbouring villages, by one or two itinerant quacks, who inoculated the children of the poor at a shilling a-head. Dr. Blennerhassett's children had had the cow-pox perfectly. But in November two of his sons were attacked with small-pox, and one had it in a confluent and severe form. He now determined to inoculate the remaining nine, with matter taken from the first, who had the small-pox mildly.

"In eight of these the progress of the small-pox inoculation was as follows:—On the second or third day, a small vesicle appeared with the edges red, and somewhat inflamed from the first, presenting pretty nearly the appearance of the spurious cowpock; it was not so circular as the vaccine pustule, and had not the flat top, which I reckon the chief distinctive mark of the latter. The pustule increased in size, and the angry, festering appearance of the edges became more apparent, till the eleventh or twelfth day, when the erysipelatous inflammation, though not quite so vivid and well defined as in cowpock, encircled the pustules. This inflammation, in some of them, went quite round the arm, occupying about half of it; and in one boy of eleven, it fairly surrounded the entire arm from the top of the shoulder to the elbow, in the shape of a slight *erythema*, so that I thought it right to apply a saturnine lotion, which soon subdued it. This

inflammation disappeared in all of them in two or three days, leaving a larger sore than in cowpock, which soon became incrustated with a black scab, which continued several days; and in one or two, when it was rubbed off prematurely, exhibited a deep red pit, and on healing, left a deeper eschar than in cowpock. About the fourth or fifth day a slight swelling in the glands of the axilla of the affected arm was perceptible, with considerable pain on pressure, or on moving the arm.

On the sixth or seventh day all the eight suffered a smart febrile attack with some rigors, increased heat, accelerated pulse, pain in the head, limbs, and back, and sickness of the stomach, with prostration of strength, and great depression of spirits; this continued two or three days; but in a lad of seventeen and the boy of eleven, the fever continued for five days so extremely severe, as to confine them to their beds, and I began to repent that I had not let them take their chance, apprehending that this fever would be succeeded by a crowded eruption; however, I had the pleasure to find, that the febrile symptoms gave way without the eruption of a single pustule, excepting a number of minute vesicles which surrounded the inoculated part of the arm. The child in whom the inoculation failed was an infant whom I vaccinated three months before; I repeated the inoculation, however, in the summer of 1836, and he then took it in the form I have now detailed."

He was now pressed to inoculate ten members of a family, which he did with matter taken from his son who had had confluent small-pox. He found the result almost exactly similar; the symptoms of pain in the axilla, and the occurrence of fever on the sixth, seventh, or eighth day, proving that the constitution was fully affected; one only of this family resisted the inoculation, a girl of about fifteen.

"Besides the nineteen now recounted, I inoculated fifty-one more in the course of a few weeks, the majority of them being children of the gentry of the town and neighbourhood, of various ages, from that of five or six to puberty; the fever and other symptoms (except the pain in the axilla, which was sometimes wanting) were the same as already detailed; in the case of one young lady, the fever appeared so early as the fifth day; but on whatever day it appeared, it was generally sufficiently active to confine the patients to the bed, for two days at least, when it gradually subsided, as in my own family, without any decided pustular eruption, except in two instances, in each of which, a gentleman and lady of about twenty, somewhat more than 200 perfect small-pox pustules occurred in the face and body. When variolous inoculation was practised previous to the introduction of cowpock, the progress of the punctured vesicle, as well as the pain in the axilla and febrile symptoms, were very nearly similar to those I have now described; and in a great majority of cases, particularly in those who had undergone a preliminary preparation for inoculation, there occurred no pustular eruption, except the minute pustules which surrounded the areola of the punctured part. The small-pox, therefore, in sixty-eight out of seventy of my cases, was, I almost venture to say, as fully communicated, as if the patients had never been vaccinated."

INTRODUCTION OF SYPHILIS INTO THE SYSTEM, THROUGH OTHER CHANNELS THAN SEXUAL INTERCOURSE. By CLEMENT HAMERTON, Surgeon to the Castletown Dispensary.*

Mr. Hamerton relates some cases, from which he draws the following conclusions:—

* Dub. Journ. March, 1841.

A healthy child is applied to the breast of a venereal nurse, in a couple of weeks syphilis shews itself in the child. A venereal child is applied to the breast of a healthy woman, soon afterwards she gets a syphilitic sore of the breast, which contaminates her system. A servant girl sucks a venereal sore breast, she gets a venereal ulcer of the mouth, which taints her system. The midwife has a slight scratch on the palm of the hand, and in delivering a putrid venereal child, she gets a sore on the hand which infects her system; and lastly, the husband of the midwife is diseased at the time the ulcer exists upon his wife's hand. The husbands of Duffy and Fay had not a single syphilitic symptom, nor did they take any mercury. The only inference I think warranted from the above cases (differing from the received opinions) is, that when the death or disease of the children has been caused by a syphilitic taint in the mother, not received from the male parent, it is not necessary to subject the latter to a mercurial course.

CRACKED TONGUE.*

A country lad, aged 18, consulted Dr. Godson, on account of a deep groove, or crack, extending from the root to the apex; the edges of which groove or crack were somewhat elevated, rough, and irregular. The lad declared that he had suffered greatly from this affection during the last six or eight months; and that he had consulted several medical men, but had derived no benefit from their advice.

"Of course, I looked to the stomach (the unfortunate organ to whose impertinence so many local diseases are speciously assigned) as the proximate cause of the lad's 'bad tongue.' Accordingly, I set about putting the digestive organs into 'good order,' and applied various caustics to the part affected, &c.; but at the end of two months the groove or crack in the tongue remained *status quo*."

At the end of two months, the lad was no better. Dr. G. quotes the case of Charles Matthews, related in his "Memoirs." "In a few weeks (says Mrs. M.) after these harassing struggles, my husband found an occasional inconvenience, that he had lately felt, augmented to a most serious disorder, his eventual sufferings from which were truly pitiable. I can only describe it by saying, that it showed itself in *deep cracks across his tongue*. Every advice was sought and attended to; but it baffled the first-rate skill and experience. It sometimes prevented him from eating, and banished sleep; and had he not been resolute in the prosecution of his duty, he must have declared it (as his medical men did) impossible to use it professionally. Every word he uttered was like a drop of aquafortis upon these cracks. This complaint had in turn been pronounced to be *stomach* and *local fever*, caused by anxiety and his great professional exertions. On the days of performance he often found it requisite to preserve a total silence until he began his 'entertainment,' when he described his sensations to be like what he must be supposed to feel while talking and singing with a piece of red hot iron attached to his tongue."

This is not a very uncommon affection. It is a very troublesome one. As a general rule, solutions of caustic as applications, and sarsaparilla with the iodide of potassium or the nitric acid, as internal remedies, combined with regulation of the secretions, and the avoidance of mercury in anything like full doses have, in our hands, answered best.

* Lancet, Sept. 1840.

DR. GREGORY *versus* "VARIOLE VACCINÆ."

We are come or coming to a happy state with reference to the protective power of vaccination. Our readers recollect that it has been just settled that cow-pox is small-pox. Dr. Gregory is quite positive that it is *not*. We quote from that capital little work—Braithwaite's Retrospect—a work very much wanted in these days of Journalism.

Dr. Gregory writes to Mr. Stuart:—

Will revaccination protect, and for how long? The true answer I believe to be as follows:—The value of revaccination is in one sense proportioned to the effect produced. If revaccination produces a full eight-day pock with areola, it stands *loco primæ vaccinæ*, and the individual may be said to open a new policy of vaccine insurance, dated from that period. On the other hand, if the revaccination produces little or no effect (a mere irritated papula), nothing is taken by the motion. The individual remains in *statu quo ante* revaccination. But then comes the question; will a modified effect serve to fill up the measure of vaccine protection decayed during the preceding ten, fifteen, or twenty years? This is the pinching part of the question. My persuasion is, that you cannot thus multiply degrees of vaccine protection. Two imperfect vaccinations do not, in medical arithmetic, equal one perfect one; no,—nor three, nor four, nor twenty. Modified or imperfect revaccinations, therefore, in my estimation, = 0; they are worth nothing. They irritate the arm, and that is all. The constitution is uninfluenced by them. I may be wrong in this, and I am ready to correct the error, if it can be shewn to be error; but all my experience goes to this. The doctrine of proto and deuto-vaccinations will soon merge in that of trito, and ultimately (as time creeps on) in poly-vaccination. Will a man be perfectly safe (that is to say) who is vaccinated (or subject to vaccination) every year? Those who support the present fashionable theory and practice of revaccination will please answer this question.

I have now brought you to the point which I have been anxious to gain. I have never yet addressed any one, in writing, on this subject, and I now write to you on it, because I see that you have considered it well; that you have thrown off the trammels of Jennerian pathology, and are content to think for yourself. Observe, I say Jennerian pathology, not Jennerian practice. I feel assured you do not view vaccination as a kind of small-pox. The term *variole vaccinæ* was incorrect in pathology. Cow-pock is a something that alters the human blood, and indisposes it to take small-pox. But it is not small-pox. A coating of gold secures our salt spoons from the action of chlorine; but gold is not chlorine. Small-pox after vaccination is not on a par with double small-pox. Small-pox after vaccination is a first attack of small-pox, and may be followed by a second some twenty or thirty years hence. Well, then what is to be done to fortify the public mind in the matter of vaccine security? How long are we to go on thus showing annually or epidemically our practical distrust of vaccination? The sooner we come to a decision on the subject the better. There is one, and only one way in which this can be done. Not by revaccination, but by inoculation at distant periods from the date of vaccination.

Now as to the real pathology of vaccination. Jenner's theory must be given up, viz. that cow-pox is only small-pox in its mildest and most original form; that a man has cow-pox now instead of the small-pox which he had formerly; that small-pox occurring after cow-pox is analogous to small-pox after small-pox. These three positions, the foundations of Jenner's notions, are, I believe, entirely groundless and imaginary. The true pathology of vaccination is altogether different.

Now, vaccination has the extraordinary power of giving to the human body the singular property of resistance to the variolous effluvia. Vaccination is not small-pox, but just the reverse,—the antagonist principle.

What wonder, therefore, can it be, if time should demonstrate, that the power of resistance thus conferred, is confined within certain limits; as thus:

1. The power of resistance is complete (both as to casual and inoculative admission) for the first ten years of life.

2. The power of resistance ceases in certain constitutions before it ceases in others.

3. The power of resistance given by cow-pock ceases *quoad* inoculation before it ceases *quoad* the casual (or infective) mode of access.

5. The power of resistance is diminished, by any great changes taking place in the human frame, whether brought about by puberty, or change of climate, or by a long fever; or lastly, by gradual and insensible changes taking place in the system.

There may be many more laws affecting the general principle of resistance given by vaccination hitherto unsuspected. I believe there are. I see daily facts inexplicable on any known principle. For I wholly throw out of consideration Jenner's fanciful notions of vaccination impeded by pre-occupation of the skin; of vaccination rendered imperfect by the virus being taken at too late a period; or the more modern notion, that too few vesicles are raised; or those few not developing a sufficient amount of constitutional fever. All this is mere unauthorized theory. Two or three good vesicles on the arm constitute vaccination. When small-pox subsequently occurs, do not then reason *ex post facto*, and say the vaccination was faulty, but find out what are the laws which limit the principle of vaccine resistance.

Jenner set us all so wrong by his term *varioles vaccinae*, that it is really difficult to get out of the false (because so well beaten) track. If he had wanted a short expressive term, it should have been *vaccinia antivariolosa*. We should then have set ourselves to study how far the antivariolous power extended, and by what laws it is limited.—*Braithwaite's Retrospect*.

EXPLANATION OF THE SYMPTOMS OF EMPHYSEMA OF THE LUNGS, BY THE NATURE OF THE ANATOMICAL LESION.*

We extract the following from a paper on Emphysema of the Lungs, by Dr. Goolden. The paper gives an account of the views of Dr. Lombard, of Geneva.

The symptoms may be divided into two groups.

The one is the immediate consequence of the retention of air within the lung. The other is produced by the obstruction of the circulation, and inaptness of the diseased portion to perform the function of respiration.

To the first group belong—

1. The sonorousness of the chest; since a considerable quantity of air remains confined within the lung.

2. Distortion of the chest. It is a common observation, that the walls of cavities mould themselves to their contents; and if the lung continues permanently in a state of distension, the chest will be developed in the same proportion.

3. Absence of the respiratory murmur, the natural consequence of the fulness of the lung, which, being already distended to the utmost, can receive no more at each inspiration.

4. Atrophy of the inspiratory muscles, which Dr. Stokes has remarked as the consequence of the forced extension in which they are maintained by the morbid distension of the lung, and which may in a measure account for the weakness of the inspiratory sound.

* Med. Gazette, Jan. 29, 1841.

To the second group belong—

1. Palpitations.
2. Hypertrophy and dilatation of the right ventricle.
3. Dropsy, resulting from the obstruction to the pulmonary circulation through the morbid lung.
4. Dyspnoea, where there is a greater supply of venous blood than the diseased lungs can arterialize. This explains the various causes producing a paroxysm of asthma; such as exercise, mental emotion, stimulants, which increase the circulation, a full stomach, the recumbent posture, preventing the descent of the diaphragm, obstructions of the air-cells or lobes, which prevent the lungs from using their full power in performing the respiratory function.
5. The frequency of pulmonary catarrhs, the result of the increased activity of the healthy parts of the lung, in those patients in whom a whole lobe, and frequently a whole lung, is perfectly useless for the purpose of respiration.

A MODE OF INTRODUCING THE CATHETER IN DIFFICULT CASES.*

Dr. Patterson has adopted a plan of introducing the catheter in cases of difficulty, which he thinks may be useful. We confess that we believe practice and dexterity are the things needful. But to Dr. Patterson's method. It consists in attaching a bladder of water to the catheter, and, when there is an obstruction, directing a stream through the instrument upon it.

He attaches a small bladder to the end of the catheter, after the manner of a mounted enema pipe, the bladder need not be large, one that holds about half a pint of water will be sufficiently so; and the catheter must be furnished with a small cork, having a piece of twine fixed to it, just like the cork of an enema pipe. The largest sized catheter the urethra will admit of should be used, that the impetus of as large a jet of water as possible may act on the obstructed part of the canal, and also that the urethra being filled by the instrument, the fluid may be easily prevented from returning by the side of the catheter. The eye must be large, and very near the end of the tube; or, what is better, the tube should have a large orifice within the circumference of its anterior extremity, with the edge rounded in so as that it shall not hurt, or catch the lining membrane of the passage. Also it must be a silver or permanently curved elastic catheter: for the injecting apparatus would prevent the withdrawal of the stilet necessary to maintain the curvature of a common elastic one.

The instrument, having the attached bladder properly adjusted, is to be passed down to the obstruction: if it cannot now, on further trial, be made to enter the patient's bladder, it must be held by an assistant, while the small cork is being inserted into its outer end: about six ounces of lukewarm water are to be poured into the injecting apparatus; the latter must then be closed, and tied as near as possible to the fluid, so as to exclude every portion of air. The operator is next to encircle the penis with the finger and thumb of his left hand, making gentle circular pressure to close the urethra round the catheter; he will then, having first withdrawn the cork, embrace the bladder of water with his right hand, so as to be able to apply strong and uniform pressure on as much of its surface as possible, in doing which, its contents being continuously and forcibly propelled into the urethra, and the handle of the instrument being at the same time depressed, the latter at once passes with facility into the patient's bladder.

The left hand in holding the penis, should be quite passive, allowing the ut-

* Dublin Journal, March 1841.

most freedom of motion to the catheter; the right hand should not touch any part of that instrument, but manœuvre it through the medium of the attached bladder of water, in the act of compressing the latter, so that its extremity may be free to follow, as it were spontaneously, the course the current of water opens before it.

Miscellanies.

MEDICAL REFORM.

At the time we are writing (the latter end of March) it is difficult to say what aspect this wears. Mr. Warburton's Bill has shuffled off its mortal coil, one scarce knows how or where, although it is obvious *why*. And the imprecations that have been heaped upon it must be highly satisfactory to the honourable member for Bridgewater, and put him much in love with the cause of Medical Reform.

Mr. Hawes's Bill has been treated scurvily too. The "*ridiculus mus*" has crept out of it to the delight of some and the dismay of many. Whether the honourable member for Lambeth may be encouraged to go on, we cannot venture to determine.

In the mean time, there are two significant indications of what turn matters are like to take. *First*, there are such differences of opinion among reformers, that unanimity in recommending or in prosecuting any scheme, seems far off and unapproachable; and *secondly*, the Colleges have admitted more or less the necessity for modifications in their constitution. The conclusions which may be naturally drawn from these premises appear to us,—the improbability of any strong interference on the part of the legislature—and the probability of spontaneous changes, more or less satisfactory and considerable, on the part of the corporations. As this will, in all likelihood, be the denouement of the piece, we are the more inclined to gather and to dwell upon the reform manifestoes of those bodies.

And first of the COLLEGE OF PHYSICIANS OF EDINBURGH. They have published the following REPORT.

At a meeting of the Royal College of Physicians of Edinburgh, called to consider the Report of a Committee of their body, on the Bills for Medical Reform, which have been introduced into the House of Commons by Mr. Warburton and Mr. Hawes, the following Resolutions were unanimously adopted:—

1st. That the College derive much pleasure from finding that the subject of Medical Reform, which has so often been under their consideration, and in which they have repeatedly endeavoured to interest the legislature, has at last been brought, in a tangible form, under the notice of the House of Commons; and trust, that the full discussion which the subject has received, and is receiving, from the profession at large, and the attention now about to be bestowed on it by Parliament, will lead to the removal of some of the evils of which the College have frequently had occasion to complain.

2d. That, in the opinion of this College, the great evil arising from the want of an uniform system of medical legislation throughout the united kingdom, is the possession, by particular corporations, of local privileges, which render their Licentiates alone legally capable of acting as general practitioners in particular districts and portions of the country, to the exclusion of persons of equal, and it may even be, of superior qualifications.

3d. That, so far as the College is aware, the only plausible objection which has been urged against the abolition of these local privileges, and against the

adoption of a system for placing the Licentiates of all the Medical Corporations on an equal footing in respect of the right of practice, is the inequality alleged to exist, or actually existing, in the amount of Medical Education required of candidates for their licenses by the several Boards, and in the degrees of strictness with which the examinations of such candidates are conducted.

4th. That whilst, therefore, with a view to the interests both of the public and the profession, community of privilege should, in the opinion of this College, be the primary object of any legislative enactment relative to the medical profession, sufficient education and examination must, at the same time, be duly provided for.

5th. That from the communications which have taken place, and the understanding that has been come to, between a number of the different Boards with which the superintendence of medical education at present rests, little difficulty can now exist in fixing a minimum course of study, general and professional, without evidence of having passed through which, no one should be allowed to present himself as a candidate for a medical license. On this point the College will only farther refer to the joint resolutions agreed on by the Medical Faculty of the University, and by the Royal Colleges of Physicians and Surgeons, of Edinburgh, of date October 1838.

6th. That to produce some approach to uniformity in the system on which the examinations of candidates for licenses are conducted by the several Boards, and to secure the public against the admission of incompetent persons into the medical profession, it appears to this College that it would be desirable that some superintending body should be constituted, having authority to take cognizance of the manner in which the duty of examination is executed.

7th. That the persons of whom this Board should consist might probably be most advantageously selected by the Crown from lists furnished by this and the other boards at present entrusted with the government of the medical profession.

8th. That, in the opinion of this College, no measure of medical reform will be satisfactory which does not confer on a person who has once received a certificate of his fitness to exercise the medical profession from any of the established Boards, the right of practising in any district of the country, or in any particular department of the profession, without the necessity of submitting himself to a second examination before another board.

9th. That whilst the College readily acknowledge that the proposal of creating a representative body or bodies, elected periodically by the profession at large, by which the affairs of the medical profession might be superintended and directed—(a proposal which forms so prominent a feature in the two measures which have been submitted to Parliament)—is desired by many most respectable members of the profession, they are disposed to believe that this desire has in a great measure originated in accidental and removable causes; and they are satisfied that any attempt to carry it into effect would be attended with serious inconveniences, if not insuperable difficulties.

10th. That, in particular, the College conceive that this proposal has in a great measure grown out of the dissatisfaction very generally prevailing among the members of the medical profession, not only with the local privileges of practice attached to the licentiates of particular corporations, as already noticed, but also with the narrow and exclusive system on which admission into the governing body of some of the medical incorporations has hitherto been regulated; and that the adoption by, or enforcement on, these corporations of conditions of admission of a more reasonable and liberal character, in obtaining for them the confidence of their licentiates, would in a great measure supersede the desire at present existing for a representative system of superintendence.

11th. That among the obvious inconveniences with which the election of a representative body, by the medical profession at large, would be attended, the College conceive that it would have the effect of producing and continually re-

newing agitation and dissension among the members of the profession, and of directing their attention from far more important duties; whilst those who are best qualified for performing the duties that should be committed to a superintending body, would be least likely and least able to take those steps which are essential to the gaining of popular suffrages. And, as a farther objection to the Boards proposed, in the bills before Parliament, to be established for the regulation of the profession, it may be remarked, that, from the multifarious duties intended to be committed to their members, and the necessity which would be imposed upon them from time to time, of leaving their homes for execution of these duties, it would be impossible to obtain the services of persons of eminence and station in the profession; and that the appointments would therefore fall into the hands of an inferior grade of individuals, in whom neither the public nor the profession would have confidence.

12th. That whilst the College readily acknowledge that the actual constitution of some of the medical corporations in the united kingdom requires to be rendered more conformable to the spirit of the age, they are not disposed to admit that these institutions are so useless, or so incapable of amendment, as to make it advisable either to abolish them by direct, or to supersede them by indirect legislation, the acknowledged fact being that, notwithstanding any defects under which they may labour, the country is, through their agency, provided, at the present time, far beyond all precedent, with well-educated and judicious practitioners.

13th. That it would be desirable that the duty of examination should be remunerated in such a manner as to remove the possibility of a suspicion, that the examiners have a pecuniary interest in the number on whom they confer the license to practise.

14th. That, considering the large amount of services gratuitously rendered to the public by the medical profession, the very inadequate compensation received by a large proportion of its members for the long and expensive course of education necessary to qualify them to practise, and for the performance of its very laborious duties; and considering also the direct interest which the public has in being able easily to distinguish between qualified and unqualified practitioners of the healing art, the College are decidedly of opinion, that any additional expenses which might be occasioned by an improved system of medical legislation should be defrayed out of the public purse, and not by an annual tax upon the profession, as seems to be contemplated in the measures which have been submitted to Parliament.

15th. That the College consider that it would be highly desirable that a scheme should be arranged for the registration of licensed practitioners. That, in their opinion, none but registered practitioners should be legally eligible for any public professional situation; that the assumption of a professional designation by a person not entitled to it, should be declared an offence punishable at common law; and that the right of suing in Courts of law for professional remuneration should be secured to licensed, and denied to unlicensed practitioners. But, in recommending enactments to these effects, for the encouragement of the licensed, and the discouragement of the unlicensed, the College is convinced that the suppression of unlicensed practitioners is beyond the reach of legislative interference, so long as there exists a taste for this species of practice in the public mind.

Such reform would be a very good thing for the Graduates of Edinburgh. For it is *not* very likely that many Englishmen will either go to Scotland for practice, or, if they go, do any thing but starve there—while it is *very* likely that Scotchmen will come to England and do well here. So that the reform which the College of Physicians of Edinburgh desire would be a capital hit. Universal legislation of practice would tell bravely for the modern Athens. A cheap education would be got there, and its schools would thrive.

We now come to the—

COLLEGE OF PHYSICIANS OF LONDON.

Report addressed to the Royal College of Physicians by the Committee appointed by the College to confer with the Deputation from the College of Surgeons and the Society of Apothecaries.

"The Committee appointed by the College of Physicians to confer with the deputation from the College of Surgeons, and the Society of Apothecaries, having carefully investigated the various grievances complained of in the several petitions to parliament for Medical Reform, and having considered the communications from different fellows 'of their views, as to any or what changes in the present constitution of the college can be effected with safety to the great objects of the college,' submits the following report:—

The grievances alleged in the petitions for reform may be stated as follows:—

1. The want of a general registration of licensed practitioners.
2. The absence of uniformity of education and qualifications in England, Ireland, and Scotland, and that licenses to practise obtained in one country are invalid in the others.
3. Self-election to the fellowship of the College of Physicians, to the council of the College of Surgeons, and to the court of assistants and examiners of the Society of Apothecaries.
4. The exclusion of the licentiates of the College of Physicians from the use of the library and museum of the college.
5. The want of some legislative enactment respecting the licensing of duly qualified persons as chemists and druggists.
6. The want of some body or board to whom all questions of medical police, public health, &c., should be referred.
7. The absence of some restriction upon quacks and vendors of quack medicines.

With respect to the last complaint, the necessity for some restrictions upon quacks or quack medicines, the committee is of opinion, that any future legislative enactments upon that subject, if such were deemed advisable, should be entirely irrespective of the College of Physicians, and should demand only the interference of the civil magistrate.

As regards the other allegations contained in the petitions, the committee think that certain changes may be effected with safety, and, in its judgment, with advantage to the College of Physicians; and which will remedy the evils complained of, as far as they relate to the college.

The committee, fully appreciating the difficulty of the task confided to it, begs to submit to the college the following statement of the alterations which it believes to be desirable at the present time.

Resolutions of the Committee.

1. That it is expedient that all physicians now practising throughout England and Wales, with a diploma of M.D. obtained from any British university, and who have attained the age of twenty-six years, should be entitled to admission into the order of licentiates of the college, without any examination, but upon the payment of fees hereafter to be determined.

2. In order to do away with the principle of self-election, the licentiates of the college shall henceforth nominate, annually, a certain number from their own body, for election into the fellowship, and from whom the fellows shall select one-half. The nomination to be conducted by ballot, a balloting-paper having been transmitted, on a given day, to each licentiate, whose address appears on the college list. The number of licentiates to be nominated in each year to be determined by the college.

3. That henceforth the licentiates shall, under certain regulations, have access to the library and museum of the college.

4. That the University of London having required for the degree of M.D. a high standard of education, which is, to a great extent, in accordance with the views of the College of Physicians, the college will be ready to admit into the order of licentiates the doctors in medicine of that university, provided that they shall respectively have attained the age of twenty-six years, and that the censors shall have assisted at their medical examinations.

5. That similar or equivalent privileges shall be accorded to the graduates in medicine of Oxford and Cambridge, who have obtained their license to practise, provided those universities shall have adopted a curriculum of medical study equal to that which the college requires.

6. That it is desirable that uniform medical qualifications should be demanded of all candidates for the degree of M.D. in England, Ireland, and Scotland, and that the degree of M.D. so obtained in either country should henceforth confer a right to practise in all, provided the graduate shall have enrolled himself in the College of Physicians of the country where he resides.

7. That doctors in medicine from foreign universities, or from such British universities as shall not assimilate their qualifications for the degree of M.D. to those contemplated in the foregoing resolution, shall be admitted into the order of licentiates upon producing testimonials of having fulfilled the course of medical study now enjoined by the college, and after having undergone the usual examinations by the censors.

8. That the College of Physicians should have only one board of examiners and a uniform system of examination for all candidates for their license, and that the order of extra-licentiates should be abolished.

9. That in any new legislative enactments that might be necessary to carry the foregoing resolutions into effect, powers might be vested in visitors appointed by the crown (or in some other controlling body), to whom all new by-laws of the College of Physicians should be submitted for their approbation.

Lastly. The committee is of opinion that if the fellows of the College of Physicians should express their willingness to modify their statutes to meet the wishes of physicians throughout the country, and to facilitate the admission into their body of all duly-educated persons, by the altering the mode of election into the fellowship, they would be authorised to claim from the legislature a confirmation and extension of the jurisdiction of the college, so as to render it effective for the protection of the interests of their branch of the profession throughout England and Wales."

This plan is a continuation of the half-measures hitherto pursued, which have reduced the college to that state of bankruptcy which its friends deplore. The distinction of fellows and licentiates is to be perpetuated—the latter are still to be elected by the former, made fellows by favouritism, excluded by jealousy. The amalgamation of physicians in England and Wales will be as remote as before. Whatever may be thought of one *FACULTY*, there can be little doubt of the absurdity of two orders of physicians—at all events of two orders not based on examinations open to all, but on election and intrigue.

THE APOTHECARIES' REPORT.

In conformity with the second resolution passed at the Conference held at the Royal College of Physicians, on the 21st of November, the Society of Apothecaries have taken into their consideration the acts of parliament granted to them in the years 1815 and 1835 (which last expired in the ensuing year), and have prepared a series of alterations and amendments in their act, which, if adopted, would in their opinion be highly acceptable to the general practitioner, and tend in a great measure to remove many objections that have from time to time been urged against that measure. It will be evident upon examination, that in the changes thus proposed by the Society they are not actuated by any

interested motives, but that they have endeavoured to direct their attention solely to the correction of those imperfections which have been pointed out to them by their own experience, or by that of others.

But independent of the changes proposed in their act, the Society have thought it incumbent upon them, in accordance with the resolution above-mentioned, to offer a sketch of a more general and extensive measure, pointing out certain principles, which, if agreed to by the three existing corporations, would, they conceive, prove highly satisfactory to all parties, both in and out of the profession, and which they would be prepared to develop more at large if called upon so to do.

The Amendments and Alterations proposed in the Act of 1815.

1. The Society desire to give up the power of searching shops.
2. They wish to modify the clause compelling an apprenticeship of five years to an apothecary ; they would propose either to shorten the period of apprenticeship, or receive as an equivalent a certain period of instruction (two years) in practical pharmacy, at the option of the parent or guardian of the pupil.
3. They would give up the power of prosecuting the unqualified practitioner, as they think it objectionable as now conducted. They think that the punishment of the unqualified practitioner should ensue upon summary conviction ; and to render this effectual, it would be necessary.
4. To introduce a general registration of all medical men.
5. They would consent to the election of a certain proportion of the members of the Court of Examiners (not exceeding one-half) from among their licentiates of ten years' standing, not being members of the Society of Apothecaries ; the election, however, still remaining as at present with the Society.
6. They would wish that one uniform sum should be paid for the certificate of qualification, both for London and the country ; that sum to be 6*l.* 6*s.*

Additions required to be made to the Act.

1. Apprentices to Surgeons should be admitted to examination.
 2. Army and Navy Surgeons, and Assistant-Surgeons, as well as those in the service of the East India Company, should be permitted to practise without being subjected to any further examination.
 3. A clause should be inserted, compelling all chemists and druggists to undergo an examination in the Latin Pharmacopoeia, Pharmaceutical Chemistry, and the Materia Medica, and granting them thereupon a license to carry on their business as chemist and druggist merely.
 4. A clause providing for the examination of all persons practising midwifery.
- Should such an arrangement of the act of parliament meet the wishes of the Royal Colleges of Physicians and Surgeons, it would be necessary that the latter body and the Society of Apothecaries should cordially unite in forming a curriculum of study that would apply equally to the surgical and medical student, and that they should also agree to a division of the subjects of examination, the College examining in Anatomy, Physiology, Surgery, and perhaps Midwifery ; the Hall in Latin, Botany, Chemistry, Materia Medica, Forensic Medicine, and the practice of Medicine.

It would also be very desirable to divide the examination into two or more parts, to be held on separate days, or after certain intervals of time interposed between each.

Enumeration of certain grounds upon which a more general and extensive measure might be founded.

It is considered that no plan can be satisfactory to the general mass of the medical profession that does not concede some share in the management of each body to its respective members.

2. It is no less desirable that a uniformity of education, and also of examination, should be established in all the medical bodies in the three kingdoms, and that no impediment should exist to prevent the licensed practitioner from practising in whatever part of the empire he chose.

OBITUARY.

DEATH has proved himself a dexterous marksman, of late, among our metropolitan Surgeons. Four prominent characters have, within a few months, been "gathered to their forefathers!" Copland Hutchinson, Anthony Carlisle, John Howship, and last, not least, Astley Cooper, have "left the warm precincts of the cheerful day," and gone to their narrow, but everlasting beds! None of these have died of old age, and the death of most of them was little expected. It is worthy of notice that two out of the four (Hutchinson and Cooper) died of the same complaint—organic disease of the heart or its consequences. Sir Astley Cooper having been long at the head of the surgical profession in this country, his illness excited more anxiety, and his death produced a stronger sensation, both in and out of the medical world, than we ever before witnessed. We think it is indisputable that no surgeon in this, or any other country, ever realized such a fortune, or acquired such wide spread fame, as Sir Astley Cooper. Much, both of his riches and reputation, was owing to his pleasing manners and cheering conduct towards his patients, and his liberal and honorable bearing towards his professional brethren. The eccentricities and uncouthness of Abernethy threw a handsome fortune into the purse of his more polished and courtly contemporary.*

It was once the fashion among hypercritics to say that Sir Astley Cooper was not a very scientific Surgeon. But neither medicine nor surgery has yet attained the rank of science; and we are inclined to think that he who is the most successful is the most scientific practitioner. Besides, these detractors have been put out of countenance by the valuable surgical works, and the beautiful anatomical preparations bequeathed to the profession by Sir Astley Cooper.

Although we have been personally acquainted with this distinguished member of our profession for 36 years past, yet his character has been so public that we can say little that has not been already said of him. The readers of this Journal are aware of the high terms in which we have always spoken of this eminent surgeon and his works, and we will not now indulge in panegyric, merely because he is dead.

Sir Astley exhibited a remarkable illustration of the adage—that it is more difficult to know one's self than to know one's neighbour. His long practice in the city must have brought many proofs before him of the difficulty as well as danger of changing long-established habits, whether mental or corporeal. Yet before the grand climacteric had passed over his head, he determined to break from the turmoil of overwhelming practice, and return to the woods, the lawns, and the groves of his elegant Tusculum, near Watford—there to crown

"A youth of labour with an age of ease."

A very short trial of this "*otium cum dignitate*," convinced the worthy Baronet that the subduction of mental excitement and corporeal exertion, in his case, would be attended with the same consequences that result from the sudden withdrawal of opium or ardent spirits from those who long indulged in such stimuli. The struggle was short, for the *enemi* was insupportable; and Sir Astley put on the professional harness never to be thrown off, till death closed the scene! The bustle and activity of body, the energy of mind, and the daily or rather hourly incense, to which the late Baronet was so long accustomed, could not be exchanged for mere literary leisure or rural pursuits, and the blackest shade of melancholy, or perhaps something worse, would soon have wrapped a noble mind in impenetrable gloom, had there not happily remained an open door for re-entering the busy scene of professional life.

* The immediate cause of death in both cases, was the same—Effusion in the Chest.

The anecdotes of Sir Astley's life would make a small volume; for he had a great deal more of humour, especially of good humour, than his eccentric contemporary, Abernethy, and seldom lost an opportunity of exercising it himself, or extracting it from others. A good many of his *facetie* are recorded in his lectures, but the great bulk are only floating in the memory of his friends and acquaintances. The bon mots which he made or picked up, were almost innumerable. We shall only allude to one—which he was very fond of repeating. When he removed a small tumour from the head of the then Prince Regent, his royal patient asked him what the tumour was called? Sir A. replied that its technical name was a "STRATOME." "Indeed!" rejoined the Prince, "I hope sincerely that it will *stay-at-home* for the future, and pay me no more visits."

The personal appearance of the worthy Baronet was extremely propossessing, and combined with his affability, contributed not a little to his professional success. In the month of September, 1834, the writer of this article was walking, one fine day, down the principal street of Berne, in Switzerland, when he observed a fine tall and majestic figure slowly pacing the middle of the same street, while numbers of people on both sides were constantly stopping to look at this object of general attention. Even the ladies were throwing open the saashes of their windows, and admiring the noble-looking stranger, who in his turn was contemplating, with much curiosity, and apparent enjoyment, the singular and picturesque costume of the Bernese. By a side-glance, the writer recognized his old friend and preceptor, and stealing up quietly behind, gave the Baronet a very smart slap on the shoulder, to the no small amusement of the Bernese loungers and spectators. A blowse-frock, travelling cap, and bronzed complexion, so masked the old friend, that Sir Astley was utterly astonished at the liberty which a stranger had taken in the middle of the street. Matters, however, were easily explained, and the writer strongly urged the Baronet to make excursions among the mountains with him, in search of health, rather than plod among museums and hospitals, of which he must have had enough and to spare. But no. Sir Astley had rather breathe the mephitic atmosphere of the dead-house or dissecting-room, than inhale the invigorating breeze of alpine height, or glittering glacier. It is probable that had this highly talented surgeon spent a couple of months annually in travelling exercise, he would have greatly checked the ravages of gout, and one of its most fatal sequences—disease of the heart.

It is quite useless to advert to Sir Astley Cooper's writings or lectures. They are well known, and need no eulogy or even notice. Many of the gossiping facts that have been stated in print, since Sir Astley's decease, are mere *fictions*. The anecdote of his demanding a shilling from an old patient who had tendered him a sovereign, is, we have no doubt, totally devoid of foundation. Till the very last illness, Sir Astley was eager after practice, and scarcely ever declined it, even when the case was purely medical; but it was not the thirst for fees—it was the love of avocation that led him to die with harness on his back. It is quite evident that the early habits and active life of this eminent practitioner disqualified him for literary leisure in advanced age. Even the salutary and amusing exercise of travelling, which his fortune enabled him to pursue, was not an equivalent for the professional avocation which had become a part and parcel of this gifted individual's constitution.

Sir Astley Cooper was one of those (not too numerous) who always acted with liberality and honesty towards his brethren, whether behind their backs or before their faces. The default in this Christian and humane conduct has injured, and continues to injure the medical character more than all the abuses which have crept into our institutions, and all the other imperfections that pervade our ranks! This amiable trait in Sir Astley's character will long render his memory cherished by a wide circle of his professional brethren, and will cause even more regret than the loss of his professional skill and acquirements to the community. Sir Astley was the last King Chirurgical which England

will ever see. The advances and the diffusion of general, as well as medico-chirurgical education, have now worked a greater equilibrium of knowledge among the profession than ever before existed. We may, and, no doubt, always will have an *aristocracy* of talent and reputation; but never an *autocracy* again! It will be the same with professional income. We much doubt whether any surgeon in this metropolis will ever receive *half* the annual income which Sir Astley Cooper received for many years in succession. For his princely fortune he was *partly* indebted to the times in which he lived—but *chiefly* to natural talent, inextinguishable zeal, unwearied industry, liberality of conduct to his brethren, and courteous demeanor to all. These are the honorable characteristics that ought to be engraven on his tomb!

EGYPT AND MOHAMMED ALI, ILLUSTRATIVE OF THE CONDITION OF HIS SLAVES AND SUBJECTS, &c. By R. R. MADDEN, M.D. Octavo, 1841. Hamilton and Co.

OUR old friend, Dr. Madden, whose exertions in the cause of humanity were so successful in the West Indies, is now on his way to the Niger, with the exploratory expedition to that land of sickness and slavery. As an interlude between Cuba and Cape Coast Castle, our highly talented and adventurous friend accompanied Sir Moses Montefiore on his mission to Damascus, with the view of rescuing the Jews of that once famous city from the iniquitous persecution of their Mohammedan tyrants—a persecution, we grieve to say, instigated, prompted, witnessed, and approved by the representative of *liberal* France—Mons. MANTON, the Consul General of the “Grande Nation!!” This worthy employée of the candid and ingenuous Thiers managed to see a few of the poor Israelites scourged to death, or *tortured*, till they confessed that of which they were no more guilty than was the Queen of England! Such are the enlightened views of *jeune France*! But as this subject will be better handled by the lay press than by us, we shall say no more on it.

Dr. Madden was once more at home in the East, after an interval of many years, and his little volume will be read with great interest by all who have at heart the liberation of our fellow-men from the chains of slavery, whether in Egypt, Africa, or the Antilles. There is but one short chapter in the work which bears directly on medicine—and that is, “On the Plague at Alexandria in 1840.”

Dr. Madden met with his old acquaintance, Dr. Grassi, after an interval of fifteen years, in the plague hospital, where he had officiated during that long period. There are, perhaps, few medical men now living, who have had such ample opportunities for observation on this interesting subject, as Dr. Grassi. “He is a plain practical man, of strong sound sense, and one whose opinion on the subject of contagion or non-contagion, deserves more attention than that of any man alive.”

“Dr. Grassi believes that the plague is contagious, and it seems to me impossible for any man in his senses to hear Grassi’s opinions given on this subject—opinions founded on experience alone, and the strong arguments and facts which he brings forward in support of those opinions, and not conceive with him, that this disease is propagated from one person to another, and that the separation of the sound from the sick, is requisite to prevent the disease from spreading through the community. Clot Bey has written, recently, a large work on this subject, in which he controverts these opinions, but he has proved nothing, and his opinions are not those of a practical observer of this disease.”

Dr. Grassi and Dr. Madden agree that the injuries done to commerce by the present quarantine are great, and, in a great measure, unnecessary. It is the

opinion of Dr. Grassi and of all the contagionists in Egypt, that the miasma is quite innoxious after ten days, whether in clothes or goods. Not one of them ever knew the disease to be propagated by infection after 20 days from the time of contact. The head of the quarantine department at Malta assured Dr. Madden that he never saw a single case of plague being communicated in the Lazaretto there, under any circumstance whatever. The same authority thinks that eight or ten days' quarantine are amply sufficient for the protection of the island against plague. On this side of Gibraltar no quarantine at all is necessary, where there are clean bills of health.

A TABLE
Exhibiting the Progress and Decrease of the Plague.

January, received	.. .. .	5
February	.. .. .	15
March	.. .. .	57
April	.. .. .	179
May	.. .. .	162
June	.. .. .	48
July	.. .. .	27
August	.. .. .	2
In the Plague Hospital of the Lazaretto Total		495

In the City, the Port, and the Suburbs of Alexandria, about 1000 cases more.

Should our amiable and highly accomplished author ever return from the Niger expedition, (which we fervently hope he will,) there is little doubt that we shall have a volume of highly interesting information from that "undiscovered bourne," from whence, alas! but few return to tell the tale!

THE DOMESTIC MANAGEMENT OF THE SICK-ROOM, NECESSARY IN AID OF MEDICAL TREATMENT, FOR THE CURE OF DISEASES. By A. T. THOMSON, M.D. &c. &c. Octavo, pp. 506. Longman & Co. 1841.

This volume is dedicated to the "Ladies of Great Britain," and "intended to render efficient their duties in the sick-room." To the said ladies it is one of the most valuable gifts that have ever been presented from the pen of a talented, old, and experienced practitioner. But the ladies of Great Britain are not the only class who ought to study this volume. The whole of the young practitioners—and nine-tenths of the old ones—will here find an immense magazine of "useful knowledge," which will often prove more serviceable and available than the armamenta medicaminum of the Pharmacopœia. The prescriptions of the physician are very often rendered nugatory, if not injurious, by the ignorance of the nurses and friends of the sick—and it is equally the duty and the interest of the medical practitioner to peruse and recommend this volume, as a work that will conduce to the recovery of his patient and the credit of himself. Unlike the generality of popular medical works, this of Dr. Thomson's will tend to smooth the path of the medical attendant by edifying and instructing the nurses and friends of the sick. We shall probably extract some passages in a future number, as samples of the work; but the name of the author, and the intrinsic merits of the performance, will insure it an extensive circulation.

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3. History of Embalming, and of Preparations in Anatomy, Pathology, and Natural History; including an Account of a New Process for Embalming. By G. N. GANNAL. Paris, 1838. Translated with notes and additions. By R. HARLAN, M.D. 8vo. pp. 264. Philadelphia, 1840.

4. Phrenological Journal, and Magazine of moral Science. Quarterly. No. 66. Jan. 1, 1841. MacLachlan and Stewart.

5. Magdalenism. An Enquiry into the Extent, Causes, and Consequences of Prostitution in Edinburgh. By W. TAIT, Surgeon. Octavo, pp. 266. Edinburgh, P. Rickard, 1841.

6. Retrospect of Practical Medicine and Surgery. Being a half-yearly Journal, containing a retrospective view of every discovery and practical improvement in the Medical Sciences. By W. BRAITHWAITE, Esq. No. 2, July and December, 1840. Octavo, pp. 416. Simpkin and Co.

 *This work increases in interest and utility.*

7. The Anatomy of the Arteries of the Human Body, &c. Part IV. By RICHARD QUAIN, Esq. &c. Taylor and Walton, Jan. 1841.

8. Medicinischer Anzeiger. Herausgegeben, Von den D. D. HACKER, und Prof. HOEL. Leipzig, 1840. Nos. 1 and 5, Vol. 1, p. 800.

 *We have noticed this new and interesting periodical elsewhere.*

9. On the Principles of Sound; their application to the New Houses of Parliament, and assimilation with the Mechanism

of the Ear. By A. W. WEBSTER, author of a Treatise on the Structure of the Ear, and Deafness. 8vo. pp. 112. Simpkin and Marshall, 1841.


10. A Letter to the Right Hon. Viscount Melbourne, with the outlines of a Bill regulating the Practice of Surgeons, Apothecaries, and Chemists and Druggists, &c. By MARTIN SINCLAIR, M.D. Senior Medical Officer to the Hulme Dispensary. 8vo. pp. 36. Highley, 1841.

11. Noces Philosophicæ: or the Philosophy of Things, as developed from the study of the Philosophy of Words. By EDWARD JOHNSON, Esq. author of "Life, Health, and Disease." No. 1. Jan. 1841. Simpkin and Co. Price one shilling.


12. The Anatomy of the Nerves of the Uterus. By ROBERT LEE, M.D. F.R.S. Physician to the British Lying-in Hospital, and Lecturer on Midwifery at St. George's Hospital. Folio, with two Plates. Bal-liere, Regent-street, Jan. 1841.

13. The Cause and Treatment of Curvature of the Spine, and Diseases of the Vertebral Column. Illustrated with cases and plates. By E. W. TUSON, F.R.S. F.L.S. Surgeon to the Middlesex Hospital, &c. &c. Octavo, pp. 282. Churchill, 1841.

14. The Domestic Management of the Sick-room, necessary in aid of Medical Treatment, for the cure of Diseases. By ANT. TODD THOMSON, M.D. &c. Octavo, pp. 506, with numerous wood-cuts. Longman and Co. 1841.

 *This excellent hand-maid to the medical practitioner should be in every family—especially where there are children or invalids.*

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 *This Report is from the pen of Mr. T. O. Prichard, and does him credit.*


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17. A Practical Treatise on the Causes, Nature, and Treatment of Strictures of the Urethra: with a Review of the Different Modes of Treatment. Illustrated by cases. By FRANCIS BURDETT COURTNEY, Member of the Royal College of Surgeons. Octavo, pp. 244. Simpkin and Marshall, 1841.

18. Egypt and Mohammed Ali. Illustrative of the condition of his Slaves and Subjects, &c. By R. R. MADDEN, M. D. &c. Octavo. Hamilton, Adams, and Co. 1841.

19. Provincial Medical and Surgical Journal, in weekly numbers, received regularly.—*In exchange.*

20. Report of the Superintendent of the Boston Lunatic Hospital, and Physician of the Public Institutions at South Boston. July 1, 1840.

 *A sensible and able Report:*

21. A few Hints addressed to Medical Students about to visit the Parisian Hospitals. By a Physician. Duodecimo, pp. 56. Churchill, 1841.

 *A useful little vade mecum.*

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23. The Library of Medicine. Arranged and Edited by ALEX. TWEEDIE, M.D. F.R.S. &c. Vol. VI. MIDWIFERY, by Edward Rigby, M.D. Physician to the General Lying-in Hospital, &c. pp. 314. Whittaker 1841.

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29. An Atlas of Plates illustrative of the Principles and Practice of Obstetric Medicine and Surgery, with descriptive letter-press. By FRANCIS RAMSBOTHAM, M.D. &c. Nos. 13 and 14, price 1s. 6d. Churchill, Jan. and Feb. 1841.

 *This concludes the work.*

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33. Petition to Parliament from the Gloucestershire Medical Association, respecting the Poor Laws.

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AN INQUIRY
INTO
THE SOURCES AND MODE OF ACTION
OF THE
POISON OF FEVER.

BY ALFRED HUDSON, M.B. T.C.D.

PHYSICIAN TO THE MALAR FEVER HOSPITAL.

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MUCH as has been written upon the history of fever, it cannot by any means be considered as an exhausted subject. If indeed we were to test our knowledge of its sources by the universality of their admission, and consider the general agreement of all observers as to their laws as the true proof of these being fully ascertained—a criterion which is applicable to medicine as to the other sciences of observation—we should see reason to conclude that in reality our knowledge of the causes of fever and their modes of action upon the living body is of very small account, and by no means of the most accurate description; for though, in this country at least, the doctrines of localization of fever are not advocated, nor fever considered the effect of inflammation of any particular organ or organs, we find in the most recent writers, equally as in the ancient, the widest differences of opinion as to the phenomena which constitute the origin or nature of this *essential disease*.

An analysis of the mass of conflicting statements upon this subject may perhaps be useful, if only as a preliminary step to other inquiries, by shewing how much of what has been put forward as evidence is really founded on observation, and how much is on the contrary mere matter of opinion and not of fact. Such an examination of what has been advanced upon the disputed question, it is proposed to attempt in the following enquiry.

We regard the essential disease termed fever as the effect of the action on the living body of a morbid poison—in other words of—

“One of that peculiar class of substances which are generated during certain processes of decomposition, and which act upon the animal economy as deadly poisons; not on account of their power of entering into combination with it, or by reason of their containing a poisonous material, but solely by virtue of their particular condition.”\*

The mode of operation of this poison upon the body is a fertile theme for disputation between the humoralists and solidists of this as of preceding ages, and whence it is derived and where generated—whether in the body or out of the body—the contagionists and non-contagionists are as much disagreed about as ever.

The humoralist holds that the very definition of a morbid poison, if correctly given by the distinguished author from whom we have adopted it, would point to the blood as the subject of its operations. Since, assuming that the *essence* of such poison is that its elements are in a state of decomposition or transposition—and its *action* to communicate that peculiar transposition to the constituents of the body with which it may be brought into contact, *He* finds in the blood a substance the most susceptible of any part of the organism of the action of exterior influences, and whose constituents are the most prone of any to form new combinations. The humoralist also points to the analogy of other morbid

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\* Liebig's Organic Chemistry.

poisons, which produce their specific effects upon their direct introduction into the blood. He points to the latent period common to both; and, if he be a contagionist (as he must be), he sees in the formation of the poison by the blood the consequence of the introduction of organic matter in a state of progressive transposition or decomposition (such as is the contagious miasm) into a mixed fluid in which its constituents are contained, and the reproduction in that fluid of the exciting body, exactly as yeast is reproduced when added to a mixed fluid in which the gluten from which it originated is contained. On the other hand, the solidist considers that the nervous system is so much engaged in fever, that the poison must be there, or, the phenomena of the latent period are attributable to the nervous system, or, dating this commencement of fever from the nervous shock, sometimes attendant on exposure, and *assuming* that the poison is received into the organism *then* and *there*, he sees an analogy between the action of the poison and certain narcotic substances which he *assumes* act on the nervous system without entering the circulation;—and therefore—fever so acts—or—lastly, the *source* of the poison not being apparent, and the shock preceding the fever, he finds that he can produce contagious fever by a moral impression on the nervous system without the action of a poison at all! These are some of the different opinions maintained by recent and able writers on the nature of fever, and which we shall have to glance at when considering the mode of action of the sources of the disease. As to these sources, our latest writers are so disagreed as to make an analysis of their opinions and evidence no easy matter. If we placed them in juxta position according to the doctrines propounded and denied, our index would run thus—

Fever contagious—not contagious.

Arises from putrefying animal matter—denied.

Arises from putrefying vegetable matter—denied.

Infection a direct emanation from the patient—denied.

Infection capable of being generated de novo—denied.

Atmosphere of patient infectious—denied.

Contact of ditto infectious—denied.

Fomites infectious—denied.

Fever originating in miasm contagious—denied.

Identity of foregoing with typhus asserted and denied.

These conflicting opinions will come under review successively in the course of an examination into the following questions.

1. The existence of a special animal poison arising from infection, and producing a specific disease—typhus.

2. The generation during the decomposition of organic substances of a poison capable of producing fever when applied to the living body.

3. The power of this paludal fever to communicate itself from one individual to another. Does it possess the power of infection per se? in other words, are typhus and typhoid fevers identical? or, does it acquire it by the aid of adventitious circumstances, and so become communicable by conversion into or superaddition of typhus?

4. Arising out of the preceding is the enquiry—what are the adventitious aids to the diffusion of each kind of fever? the laws which regulate their epidemics, and the sanatory measures best calculated to neutralise their operation.

#### CHAP. I.—OF THE INFECTIOUS ANIMAL POISON GENERATED IN THE LIVING HUMAN BODY, AND CAPABLE OF PRODUCING FEVER WHEN APPLIED TO HEALTHY BODIES.

SECT. 1.—*Proof of its tangible existence.*—It might have been supposed that

the accumulated evidence of infection presented in the histories of the typhus of Great Britain, would satisfy the most incredulous; but it is not so, and a recent author has denied the existence of such a cause of fever as atmospheric contagion\*—in other words, of “an atmosphere holding in solution a specific contagious poison.” Because—“it has never been unequivocally manifested to any of the external senses; it has never been seen combined with the atmosphere, or precipitated from it, or abstracted therefrom to solid bodies.”

It has been urged in reply, that this is equally the case with miasm and vitiated air of all kinds, which last, this author himself has endeavoured to prove, is the source of contagious fevers. But this answer is not correct, the fact being, that organic matter in a state of decomposition, or progressive transformation, is present in both. We shall hereafter adduce evidence of this fact with regard to miasm. As to its presence in aerial contagion Liebig states that—“all the observations hitherto made upon gaseous contagious matters prove that they also are substances in a state of decomposition. When vessels filled with ice are placed in air impregnated with gaseous contagious matter, their outer surfaces become covered with water containing a certain quantity of this matter in solution. This water soon becomes turbid, and in common language, putrefies; or, to describe the change more correctly, the state of decomposition of the dissolved contagious matter is completed in the water. The odour of gaseous contagious matters,” says the same author, “is generally accompanied by ammonia, which may be considered in many cases as the means through which the contagious matter receives a gaseous form. . . . Ammonia is very generally produced in cases of disease; it is always emitted in those in which contagion is generated, and is an invariable product of the decomposition of animal matter. The presence of ammonia in the air of chambers, in which diseased patients lie, particularly of those afflicted with a contagious disease, may be readily detected; for the moisture condensed by the ice in the manner just described, produces a white precipitate in a solution of corrosive sublimate, just as a solution of ammonia does. . . . By evaporating acids in air containing gaseous contagions, the ammonia is neutralized, and we thus prevent farther decomposition and destroy the power of the contagion that is its state of chemical change.”

“To this decisive proof of its presence may be added the fact of its being frequently recognized by one of the senses, that of smell, in those cases, in which it has proved active as a poison. For instance—a gentleman in this neighbourhood, not long since, passed through a severe and lengthened typhus fever. About the tenth day of convalescence, while walking across the room, leaning upon the arm of his son, the latter was struck by the odour from his father’s body; he immediately became sick at stomach, and on the next day had rigor followed by fever of the same type and duration (21 days) as his father’s.”

Dr. Montgomery’s† attack of fever, related by himself, gives similar proof that the aerial contagion may be occasionally recognized by this sense.

“On the 10th of August, I visited a patient in fever, and hearing from the nurse that there were spots on the patient’s skin, I stooped very close to her to satisfy myself, and while so doing, I was sensible of a very disagreeable odour from the skin. At the moment, it made a considerable impression on the sense of smell, being almost as pungent as the odour from an ammoniacal salt. The smell continued in my mind all day, &c.”

It is true a sceptical reasoner might argue for the possible existence in such cases of an unhealthy locality, impure air, &c.; but much of the evidence of contagion which we possess, is free from any such objection.

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\* Dr. Scott Allison—*Essay on Contagion.*

† In Marsh’s *Essay on the Origin of Fever.*

SECT. 2.—*The Testimony in proof of the Power of this Poison to cause Fever*—or, as it may be expressed, the proof that the disease has arisen from exposure to the emanations from the bodies of those similarly affected, requires to be of a very exact kind, since the opponents of the doctrine of infection, who, like the writer above quoted, affirm, that “those who have communication with the sick do not suffer in a greater proportion than those who keep apart,” explain the many instances in contradiction of this assertion which occur among the medical attendants, nurses, and relatives of the sick, by attributing them to the “locality” and to “impure air,” and add, that “it is however almost entirely on such exceptions as these that the contagionists depend for the maintenance of their gloomy doctrines.”\*

The great weight of the proof derived from the experience of the large fever hospitals in England, Ireland, and Scotland, has been well shewn by Drs. Tweedie,† Alison,‡ Christison,|| and Davidson,§ and the last gentleman justly observes, that “the simple relation of these facts would, with the majority of men, produce conviction that fever was at least contagious in these hospitals, provided the mind was not pre-occupied with an opposite theory.” Certainly none but a determined anti-contagionist could resist the fact, that, in the large fever hospitals of the three countries, every clerk has, during some period of his attendance, laboured under fever.

It is also ably proved by Dr. Christison, that the proportion of attacks among attendants is in the ratio of their exposure to the emanations from the sick. It being observed that, in the Edinburgh hospitals, they were affected in the following order as to frequency. 1. Nurses. 2. Resident clerks or house-surgeons. 3. House servants. 4. Medical students not attached to the service of the institution. Thus, in the epidemic of 1818, of 38 nurses, only two or three escaped. Of the 15 gentlemen who filled the office of resident clerk between 1817 and 1820, only two escaped.

But, overwhelming as this argument from hospital experience appears, some have considered it open to objections.¶ It has been argued, that the typhus thus received (or rather the infection of typhus) is *factitious*, and created by causes over which we ought to have exerted due control; “that the poison can only be made effective through contamination of atmosphere under long-continued accumulation of morbid effluvia; and, in fine, that the atmosphere of the patient is infectious, and not his person.” This argument receives some support from the experience of large general hospitals, which, particularly in London and Bristol, give admission to cases of typhus without its ever being observed to spread; and, from the acknowledged rarity of communication under the closest approximation among the better classes of society. It is said also that M. Louis never saw a case of communication of fever in an hospital, and Dr. Elliotson states that he never saw a case of fever infectious. It may

\* Medico-Chirurgical Review, Vol. II. New Series.

† Clinical Illustrations of Fever, and Art. Fever in Cyclop. of Pract. Med.

‡ Essay on the State of the Poor in Scotland.

|| Library of Medicine. Article, Fever.

§ Thackeray, Prize Essay.

¶ Dr. Fergusson, Edinburgh Med. and Surg. Journal, No. 112. See also a Discussion at the Royal Academy of Medicine, reported in the Medico-Chirurgical Review, Jan. 1839, in which the opinion was advocated by MM. Rochoux and Chervin, “that the disease is not communicable directly from one person to another, but is only transmissible in the way of infection, when the atmosphere around becomes loaded with the miasms which exhale from the bodies of the sick.”

however be urged in reply, that the observations of the latter eminent observers apply to a different fever—an endemial; and that the argument proves no more than that the infection of typhus is weak, compared with other infections.

But there is another kind of evidence, scarcely less decisive than that derived from the records of the large hospitals. It is thus somewhat flippantly disposed of by Dr. Davidson.

“In the outset it may be stated that we do not mean to fatigue the reader by stories about fomites, and persons who have carried the contagion about them for months or years, nor to hunt out a particular individual who has conveyed it from one town to another,” &c.

Now we think it is an admirable rule “as laid down by Dr. Elliotson,”\*—“That for infection to be *proved*, the individual who communicates the disease must go from the place where he resides to the spot where the healthy person is, and there give it to the latter. If the healthy person go to the sick person, and the sick person be still in the place where he was living when attacked, then no one can say that the disease which the former contracts has not been produced from the *situation*, and not from the *patient*. The disease may have arisen from contagion—from the emanations of the patient—but this is not proved..... Whenever such a thing occurs as disease being produced in a healthy spot by the approach of an unhealthy person to a healthy one, or by the application of fomites to a healthy person, then it is a proof of contagion, provided the instances be sufficiently numerous, for one or two cases may be quite accidental.”

The following is a fair case of importation by both person and fomites:—“A beggar from Limerick obtained admission into a labourer’s cabin for herself and a dying child. In five days after she quitted the cabin fever took place in one of the family, which consisted of a man, his wife, and five children, and in succession, within a day or two of each other, every individual sickened, and two children from a neighbouring cabin, who had attended the child’s wake, took the same fever within ten days after, and communicated it to their family. The beggar (*herself in good health*) went to a farmer’s house two miles distant, and obtained a lodging for the night, after her child was buried—every individual in the family (five in number) also took the fever within a few days—these fevers were all severe.”†

That these cases of importation of infection occasionally exercise a very great influence in the spread of fever, we are convinced by our own hospital experience. From the middle of the year 1834 to the same period in the year 1836, scarcely a single case of *contagious* typhus was admitted into the Navan fever hospital. The entire number of *fever* cases only amounting in that time to 363, and these being all instances of epidemic gastric fever or endemial typhoid fever. In the month of July, 1836, three cases of a *new fever* were admitted together. On enquiring their history, I was told that one of them was the seventh of his family who had been attacked—the other six having died. The two men who were admitted with him came from the same neighbourhood—seven miles distant—and had both had communication with the infected family. These were cases of typhus with measly efflorescence, profound adynamia, delirium, &c.

About two months afterwards an elderly man, with six of his family, were admitted labouring under typhus fever. They were from an opposite direction, about seven miles distant. The fevers, of which these were the commencing cases, spread rapidly and widely, and such was their effect upon our admissions, that the number of fever patients increased from 363 in two years to 400 in

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\* Lectures by Rogers.

† Barker and Cheyne’s Report, Vol. II.

1837, and 600 in 1838; when they were at their height. While these cases continued distinctly marked, and differed so much from our ordinary endemic fevers, as to be recognised at once by the nurses, as well as to be dreaded from their greater fatality and until they became merged in the epidemic of the past year, our cases of typhus were nearly exclusively derived from the districts in which these originated, or to which they had spread.

Careful enquiries were made as to the source of the epidemic in each case, and the following particulars were ascertained.

It appeared that in the first, a man had arrived in this country from America. It was stated that the voyage had been an unusually rapid one, and he had been ill the whole, or nearly the whole time. On landing, he was immediately removed to his father's house, twenty miles distant, and on his arrival there, was seen by a medical man, who pronounced his disease to be fever. He died on the second day after his arrival.

His father's house and neighbourhood was previously quite healthy; but in two days after his death, the father sickened, and, on the day following, his sister. She communicated the disease to her husband, who lived half a mile distant. He was attended by his brother, who caught the disease, and was one of the three first brought into hospital. The father was visited before his death by a brother, residing nearly two miles distant—on his return home he sickened, and in the course of his illness communicated it to his son. A brother of the importer contracted the disease, (apparently from his father,) and was sent into hospital, where he died, as did all the above, with the exception of the one who was sent to hospital. In short, of the family of the importer, eight out of nine were infected, and seven died.

In the course of a short time several other families, we have been informed, were completely exterminated. It spread with a rapidity and fatality perfectly unprecedented and long maintained its hold in the town and neighbourhood.

We, of course, have no means of determining the source from which the original case was derived; but we were much struck on meeting with Dr. Gerrhard's account \* of the typhus which prevailed in some parts of America in that year, with the resemblance between this epidemic and that which he has so well described—especially in the acrid infectiousness of both.

We have not to hunt so far for the second case.

This man's daughter was a servant in Dublin, where she contracted typhus and died. Her brother went to see her, and remained till her funeral took place. He sickened—came home, and died of what was described to me as a long, spotted, fever.

After his death, the abovementioned seven persons sickened within a day or two of each other, and were sent to hospital. The father died; several of the others had very severe fever; typhus spread from this house, first to the immediate neighbourhood, and subsequently to the surrounding country.

These instances are by no means all of the kind that have occurred within the time mentioned, but are selected on account of their wider influence and the unequivocal nature of the testimony they afford to the infectiousness of fever.

Among the most unquestionable sources of fever, is the communication of it by fomites carried from the patient to some place previously healthy.† It is in this manner that washerwomen frequently become the subjects of fever. Dr.

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\* American Journal of Medical Sciences, February, 1837, and Dublin Medical Journal, July, 1837.

† Dr. Stark's Experiments on the Power of different Colours to absorb Odorous Particles, (Edinburgh Philosophical Journal, April, 1834,) shew that woollen substances constitute the most powerful fomites.

Tweedie says, "to shew that the disease may be engendered by fomites in clothing, the laundresses, whose duty it is to wash the patients' clothes, are so invariably and frequently attacked with fever, that few women will undertake this loathsome and frequently disgusting duty."

Dr. Armstrong,\* an anti-contagionist, had previously noticed the same fact.

Dr. Reid and Dr. Cheyne,† inform us that, during the epidemic of 1817, not a single person of those appointed to receive the clothes of the sick escaped the disease.

The preventive effects of an early removal of the sick is one of the strongest proofs of infection, since the same measure produces no such effect in the endemic fevers.‡ The effect of early removal of the sick and the cleansing and whitewashing of their apartments, was very remarkable in checking the progress of the disease in some families, while, from the neglect of these precautions, the number of the sick rapidly increased in others. Two neighbouring houses, in Barrack-street, afforded an illustration of this remark, viz. Nos. 41, and 47. In the former the disease began in two different families, and its progress was immediately checked by early removal, cleansing, &c. In the latter, the individual first affected remained at home and died of the fever, but not before he had communicated the disease to eighteen persons in a short time.

On the effect of early removal of the sick, Dr. Alison § remarks, we should have little difficulty in pointing out above a hundred houses where a single case of fever has occurred, where the patient had been removed speedily, and the place cleansed, and where there had been no recurrence, &c. Dr. Ferriar|| states, "that formerly, when a fever began in the Manchester Infirmary, it was found necessary to dismiss almost all the patients. . . . but since a few rooms were built in 1792, separated from the rest of the wards, for the reception of such cases, though the infection has been more than once introduced, yet by removing such patients as shewed symptoms of fever at their first appearance into the secluded ward, and preventing all communication between them or their nurses, and the other patients and servants, the complaint has been stopped; and no reason has again occurred for a precipitate discharge of patients."

But in applying these facts to the proof of the infectious nature of fever, we are again met by the argument, that under all these circumstances of crowding, &c. they only prove that a factitious atmosphere of contagion is produced, and the anti-contagionist points to instances of typhus received into the Bristol and other hospitals, and mingled among the other patients without ever spreading the disease.

Dr. Davidson's quotation from Prichard, supports this view as regards Bristol. "In St. Peter's the wards are very small, and the beds were near each other—offensive smells, often perceptible, and, under these circumstances, the disease manifestly contagious. In the infirmary the wards are lofty and well ventilated—here also the fever patients were dispersed among invalids of every description—no instance occurred of the propagation of the fever—none of the nurses were attacked, nor any of the patients infected, though lying within two feet of cases of typhus gravior." (page 12.)

From the infectious form of the disease prevailing almost exclusively among

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\* Lectures by Rix.

† Dublin Medical Transactions, Vol. 3; and Dublin Hospital Reports, Vol. 2.

‡ Report of Inspectors of House of Industry, quoted by Cheyne. Dublin Hosp. Rep. Vol. 2.

§ Edinburgh Medical and Surgical Journal, Vol. 28.

|| Medical Histories, Vol. 2.



the poor, it is difficult to obtain, in Ireland, a case not liable to the above objections. The following is perhaps as decisive, and as free from objection as may be.

In the month of March, 1839, an old man, with his son and daughter—all of them persons of cleanly appearance—and in comfortable circumstances—were admitted into the Navan Fever Hospital. The history which they gave of their seizure was, that another son, the only other member of the family, had contracted fever, by sleeping for two nights in a house eight miles distant, in which was a person in an advanced stage of the disease. On his return home, he lay down in a fever of twenty-one days. About the 3d day after his crisis, his father sickened—on the following day, his sister, and in a day or two after, his brother. A day or two before these persons came into hospital, a young man, a cousin of the parties, was admitted. He was one of a family of *ten* living near his uncle's house. He *alone*, of this family, visited his cousin during his illness. His family shewed their caution farther, by sending him into hospital early in the disease. He passed through the same fever (typhus, severe in all, and fatal in the old man,) as the others, but no one of his large family took the disease; and on enquiry, a year afterwards, I learned that they were all still free from fever.

**SECT. 3.—Varieties in the Nature or Sources of the Poison.**—The dogma of Dr. Bancroft, that the contagion of typhus\*—"The original work of our common Creator must have been continued in existence by the energies of a living principle, exerted successively in the different bodies through which it has been transmitted from one generation to another,"—has met with comparatively few supporters among late writers on fever. Elliotson,† Barker,‡ Roupell,§ Perry,|| and Davidson,¶ espouse this doctrine, but without adding in the least to the meagre facts upon which it is founded.

On the other hand, numerous observers assert the production of typhus under circumstances in which the existence of a fever poison derived from a person labouring under the disease, was out of the question; and therefore they have assumed "that certain physical and moral conditions may so act on the operations of the body as to cause it to generate within itself that which produces the phenomena of fever, independent of any exterior poison."

Dr. Ferriar\*\* thus enumerates the circumstances, under the combined action of which fever has been observed to arise spontaneously.

1. Want of fresh air.
2. A deficient or improper diet.
3. Want of cleanliness, and, chiefly, want of a proper renewal and change of clothes.
4. Anxiety and depression of spirits.

The second and fourth of these are probably the essential causes of the generation of the poison, and the others assist by producing its accumulation—as in typhus—the diseased emanations constitute the poison; which, however, is all but harmless, unless accumulated.

The following graphic sketch of fever, thus originating, is given by Dr. J. Hunter.†† In the month of February, 1779, I met with two examples of fever in the lodgings of some poor people whom I visited, that resembled in their symptoms the distemper which is called the jail or hospital fever.

\* On Yellow Fever.

† Lectures, by Rogers, page 296.

‡ Dublin Medical Transactions, Vol. 2, p. 595.

§ On Typhus.

|| Dublin Medical Journal, Vol. 10.

¶ Prize Essay.

\*\* Medical Histories, Vol. 1.

†† Remarks on the Jail or Hospital Fever, Medical Transactions, Vol. 3.

It appeared singular that this disease should shew itself after three months of cold weather. Being, therefore, desirous of learning the circumstances upon which this depended, I neglected no opportunity of attending to similar cases. I soon found a sufficient number of them for the purposes of farther information.

It appeared that the fever began in all in the same way, and originated from the same causes.

A poor family, consisting of the husband, wife, and one or more children, were lodged in a small apartment, not exceeding twelve or fourteen feet in length, and as much in breadth. The support of these depended on the daily labour of the husband, who with difficulty could earn enough to purchase food necessary for their subsistence, without being able to provide sufficient clothing or fuel against the inclemencies of the season.

In order, therefore, to defend themselves against the cold of the weather, their small apartment was closely shut up and the air excluded by every possible means. They did not remain long in this situation, before the air became so vitiated as to affect their health, and produce a fever in some one of the miserable family. The fever was not violent at first, but generally crept on gradually, and the sickness of one of the family became an additional reason for still more effectually excluding the fresh air, and was also a means of keeping a greater proportion of the family in the apartment during the day. Soon after the first, a second was seized with the fever, and in a few days the whole family perhaps were attacked, one after another, with the same distemper. The slow approach of the fever, the great loss of strength, the quickness of the pulse, with little hardness or fullness, the tremor of the hands, and the petechiæ or brown spots upon the skin, to which may be added the infectious nature of the distemper, left no doubt of its being the same with what is usually called the jail or hospital fever. It would appear there is no great power of infection in the body alone provided the air be not confined. Remarking on the exemption from this disease which warm countries enjoy, he says,—“On the cold is the cause of the air being confined which gives rise to the poison, and thus, directly opposite to the opinions usually received, there is more danger of producing this disease in a cold country, and in a cold season of the year, than in a warm one.”

A person exposed to and living in the poisonous air becomes feeble and irritable, his sleep is disturbed, his tongue is white in the morning, his appetite is impaired, and the smallest bodily exertion quickens his pulse and fatigues him. He will remain in this state for weeks together, without any formed attack of fever; yet another receiving the infection from him, shall suddenly be seized with a violent disease. In this manner it is, I much suspect, that prisoners brought into a crowded court often produced the most dreadful consequences, by disseminating the infection lodged in their clothes. An instance of this kind is given by Dr. Fordyce,\* which deserves mention. Arguing for a distinction between this poison and putrefactive poisons, he says—“This is undoubtedly not the case, since infection has arisen from a person brought out of rooms in which numbers had been confined for several months, but kept clean from all putrescent matter, so that there was no particular smell or other sensible quality. In one case that came under the observation of the author, a person under such circumstances, from whom no peculiar smell arose, or any other sensible effluvia, communicated the infection to four others with whom he was carried in a coach for about half a mile, so as to produce fevers in all of them, which fevers were violent and fatal.”

Dr. Ferriar properly includes *moral* causes—“because it is not proved that the mere confinement of the effluvia of clean and healthy persons, free from

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\* On Fevers, Dissertation, I. page 114.

mental uneasiness can become poisonous. This view derives considerable support from the following remarkable case by Dr. Harty, of the origin of fever from a single person under such circumstances.

A gentleman\* was suspected of having confined and ill-treated his wife. At length two gentlemen, one of them a clergyman, having obtained the necessary authority, visited the house, and examined every apartment for the wretched object of their humane search—at first in vain; but at length a small closet door attracted their notice, and having insisted on its being opened, both gentlemen eagerly entered, and as precipitately retreated. One was immediately seized with vomiting; the other (the clergyman) felt sick and faint. After a little, they recruited and called the wretched woman from her prison hole, in which she had been for weeks immured. It was a small dark closet without *light* or *air*, and in it she had been immured without a change of clothes. At the end of a week both gentlemen had fever; both took to their beds almost on the same day. The clergyman died, and the other recovered with great difficulty after a severe struggle. Both cases were alike throughout, except in the termination. The woman had not then or afterwards any febrile disease, and had been free from any at any period of her confinement.

Bursts of fever from this cause occur, at times, in situations where no possibility of contagion from without exists—as in prisons, in surgical hospitals, and in situations in which typhus does not usually prevail and has not been introduced from without. Dr. Harty gives unequivocal testimony of this fact, derived from his experience in the Dublin prisons. For cases occurring in crowded wards of hospitals during cold weather, we may refer to Palloni,† Currie,‡ Tweedie.§

Dr. Ferriar|| gives a decisive instance of fever arising in the habitations of the poor from this cause at Carlisle in 1778—9. We must be content to refer the reader who may be desirous of sifting the evidence on this much disputed question, to the above writers, as a recital of the cases would occupy too much space. It cannot be doubted that this depraved atmosphere has been sometimes considered as a source, when it really only favoured the diffusion of the fever poison, whether emanating from the bodies of typhous patients or from paludal sources. We shall have occasion to recur to this subject when examining the circumstances which favour the diffusion of fever as an epidemic disease. At present it may be remarked that, the writers on both sides of the question, have relied in some instances, upon exceptionable proofs. Thus Dr. Peebles, in his valuable paper, adduces several cases which occurred on board ships, which are seldom free from some of the paludal sources. It is also sagaciously remarked by Lind, that it is in ships going from home, and not in those returning from the longest voyages, that fever is found. The reason is obvious.

But if weak cases have been adduced in proof of the origin of fever from this source, they have equally been relied on by the great opponent of the doctrine and his followers. Dr. Bancroft has rested much of his argument upon the fact, that on board slave ships, where the crowding was unprecedentedly great, fever was unknown.¶

But, as has been well observed by Dr. Fergusson,\*\* there are two good reasons for this.

\* On Fevers, page 163.

† Quoted by Dr. Peebles, Edin. Med. and Surg. Journal. No. 125.

‡ Medical Reports, page 6.

§ Clinical Illustrations.

|| Medical Histories, Vol. I.

¶ On Yellow Fever, page 127, &c. It is worthy of notice, that in the passage quoted from Dr. Lind (page 128), the liability of felons in transports to fever is asserted.

\*\* Edinb. Med. and Surg. Journal, No. 112.

1st. The absence of all fomites—the wretches being naked there was nothing to retain the effluvia.

2nd. The high temperature, which is always destructive of the poison of typhus.

The absence of fever from the huts of Fins and Russians, may be explained in a similar way, by the high artificial heat constantly kept up in them, and the total absence of moisture. None of the advocates of exclusive contagion, from Bancroft to Davidson, add any facts to the meagre evidence upon which the argument is founded. The enquiry is altogether one of the most important connected with the subject of fever, and bears strongly in its consequences upon science and humanity.

For if it appear that the poison of typhus can be generated *de novo*, under the conjoint action of the above-mentioned moral and physical causes, we should institute enquiries as to the part which each performs in the production of this result, and without wishing “*to get rid of a difficulty*,” we should, on other grounds than our inability to trace contagion to its primordial source, pursue the investigation of its laws, disregarding any such affectation of strict logic as is contained in the following passage.\* It is not intended, however, to enter into any speculations respecting the primordial source of the contagion of typhus, for the sources from which it, as well as that of the other contagious fevers originated, are involved in absolute obscurity; and though we could trace them to the most remote era in antiquity, the same difficulty would be encountered. Some authors, apparently to get rid of this difficulty, and to account for the occurrence of typhus, where no contagion could be traced, have adopted the opinion, that it may be generated by common causes, such as impure air, filth, &c., and be afterwards capable of propagation by contagion. *The argument of analogy is directly opposed to this belief, for if in nature there be no exception to the law, that two causes are never required to produce precisely the same effect, it will follow that, whatever cause can be best reconciled with the phenomena of typhus, must be considered the true source of the disease.* And accordingly this writer proceeds to return a hasty verdict of “not proven,” upon the claims of every cause but this “one true source,” contagion.

The following remark of the venerable Dr. Stokes upon this subject is too apposite to be passed over without notice. “This supposition of a *single cause* of the effects we witness, is quite unsupported by nature. Every animal, every plant, every rock, requires for its production the co-operation of many causes that we know, and most probably of many more that we have not yet discovered. All nature depends ultimately on a single cause, but it has pleased the Almighty to cause that the effects which concern us immediately should arise from the co-operation of several of his creatures.”†

Again, if it appears that the febrile poison can be thus generated, we need not follow Dr. Barker‡ to the Continent of Europe to look for it. Nor need we to accompany§ Dr. Lombard upon his geographico-typhoid tour in proof that the frieze coat of the Irish labourer is its depository, in which it is exported like other “native manufactures.”

\* Davidson, page 2. † Essay on Contagion, page 25.

‡ Dublin Medical Transactions, Vol. 2.

§ This notion of Dr. Lombard's, along with an opinion expressed by Mr. Farr, in the article Vital Statistics, in M'Cullagh's Statistics of the British Empire, “that the poor Irish are keeping up, if they are not introducing, the fevers of their wretched country in the heart of the British cities,” has been met by Dr. Cowan, and by an acute reviewer in the Dublin Medical Journal, for January, 1838. But the latter, while he confers a merited castigation upon Dr. Lombard, bears too hard upon Mr. Farr, whom he classes with certain humane political economists who wrote, that it would be well that Ireland were sunk in the

But the question has a great bearing upon humanity and political economy. Take the case of an epidemic such as has prevailed in Ireland during the past year. Suppose that in a town containing a great number of poor in which fever perhaps has not yet appeared, the inhabitants meet to confer upon the best preventive measures. These will differ as their views of the sources of the disease differ; one may suppose that the contagion is in all cases *imported*, and can see no protection except in a "cordon sanitaire."

Another believes that fever is exclusively of *endemic origin*, and he says—make sewers, sweep away the dung-hills—white-wash the houses.\* While the man *alone* who conceives the generation of the poison under the foregoing circumstances, possible will recommend the true prophylactics, and, by providing clothing and fuel, cause the light and air to be admitted into their crowded dwellings, and by relieving mind and body from the pressure of impending starvation, will both render them less susceptible of disease *if* it approach them, and less capable of generating in themselves the poison which he believes may arise among them without exterior communication.

On this question it is impossible to speak of humanity and political economy apart. The following extract from Dr. Alison's essay on the management of the poor in Scotland, will prove how even motives of economy should lead to the application of the true preventive-relief of the wants of the poor.

"A fever which consigns thousands to the grave," says Dr. Harty, "consigns tens of thousands to a worse fate—to hopeless poverty; for fever spares the children and cuts off the parents, leaving the wretched offspring to fill the future ranks of prostitution, mendicancy, and crime." "The mortality of fever," says Dr. Barker, "is most frequent where it is most injurious, viz. in men advanced in life, the heads and supports of families, the increase of poverty and mendicity, and the agonizing mental distress to which it must give rise, are consequences which must occur to every reflecting mind." There is no exaggeration in the simple and impressive statement of Dr. Cowan—that "the prevalence of fever presents obstacles to the promotion of social improvement among the lower

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sea. And says there is not the slightest evidence that the labouring classes *introduce* fever into the hearts of British cities. Probably not. In the case of Glasgow, Dr. Stuberoh's paper, Dublin Journal, No. 39, would seem to shew that they do not—at least by *importing* it. But in an able and temperate reply in the second edition of M'Cullagh's book, Mr. Farr has shewn that, in the three great avenues by which the Irish labourers enter the kingdom—Bristol, Liverpool, and Glasgow, their crowding to excess in lodging-houses, their loathsome diet and filth, are productive of epidemic fever, and he concludes with the following wise remarks.

"In directing attention to a weighty sanitary fact, it is far from our intention to convey any reflection upon the Irish people. We shall, in treating of epidemics, shew that the English were formerly in as bad a condition as the Irish, and we must say we had imagined that any attempt to prove that England is vitally interested in the prosperity and happiness of Ireland, would be rendering neither country disservice. . . . Reduce your neighbours to ruin and starvation, and you inevitably give rise to diseases which lower like avenging angels over your own heads. . . . So God avenges oppression; it reaps the fruits of its own handiwork.—(M'Cullagh's Statistics, Vol. 2nd. p. 529).

\* See Sanatory Reports of Poor Law Commissioners, p. 14, and Report of the Select Committee on Health of Towns, p. 111.

Also the following passage from a Report of Dr. Addison's Essay on Malaria, Lond. Med. Gazette, vol. 3, N.S. p. 796.

"He thought that if any *palladium* could be discovered potent for the salvation of the city, it would be found in the shape of a *scavenger*."

classes, and is productive of an amount of human misery credible only to those who have witnessed it.' In the last situation in which I have seen fever prevailing epidemically in Edinburgh, (new land at the foot of the old fish market close) I find, on enquiry, that five families out of the inhabitants of twelve rooms in the two upper flats of the house, have been rendered fatherless by it." p. 9.

We could parallel these cases in this town, but it is unnecessary. There is one more consideration arising from this subject—it is a selfish one, and therefore not the least powerful—it is contained in the following profound reflection of the excellent Ferriar. "The diseases arising from wretchedness differ in this respect from those of luxury; the first are generally *infectious*, the latter solitary but *hereditary*. This observation would furnish an excellent moral, but as it is needless to suggest it, I pass on to my next point."

SECT. 4.—*The Mode of Action of the Poison, and the Circumstances which assist its Operation in the Human Body.*

The opinions of the majority of physicians of the present day are divided, as to the *theory of fever*, into two parties—the solidists and the humoralists.

That of the former party is thus announced in the article fever, Library of Medicine, by Dr. Christison. "The theory of fever, then, which seems most consonant with the whole facts, with the general sentiments of the profession, especially in Britain, and with a sound and prudent practice, is probably the following. Fever is an essential or primary disease. The first appreciable event in the chain of sequences constituting fever is a functional injury of the nervous system. The only essential or invariable consequence of this affection is functional derangement of most of the important organs of the body, but more especially of the brain, the circulating organs and fluid, the alimentary canal, and the skin..... The changes which have hitherto been observed to take place in the blood and other animal fluids, are, like the local disorders, secondary and not primary. They may be the source of the phenomena remarked in the advanced stage of the disease, but they are not the source of the disease itself in the first instance."

If we turn to another recent work of high authority, we find the very reverse order of sequence is maintained. "It appears probable, if not certain, from what has been advanced, that in a certain class of fevers (typhoid) the blood is *primarily* diseased, and that certain changes in one or more organs take place as a consequence or secondary effect."\*

It will be seen that neither of these distinguished writers assigns the phenomena of fever exclusively to his system; and it has been well remarked, "that all febrile disturbances are disturbances of such vital actions as are the *joint* product of these two great factors of vital phenomena—for example, the primary phenomena of all fevers are—1, disturbance in the formation of animal heat; 2, disturbance in all the secreting functions; 3, disturbance in the process of nutrition. But the formation of animal heat, secretion, and the nutritive process, are all dependent on the conjoint action of the nerves and blood-vessels. Either of these two systems may receive the first morbid impression, but the one soon participates in the changes of the other."†

This last sentence involves the proper terms of the controverted question, for, while all must admit that the phenomena of fever *established* are due to the conjoint operation of the nervous system and the blood, the solidists maintain that it is upon the nervous system the morbid impression of contagion acts primarily; while the advocate of a modified humoral theory holds that the source and primary seat of typhous fevers, properly so called, is proved to be in

\* Dr. Tweedie. Art. Fever. Cyclopædia of Practical Medicine.

† Ferguson on Diseases of Women. Part 1. P. 97.

the blood; and that the order of sequence is, first, a vitiation of the blood by the commixture of deleterious substances; next, in consequence of such vitiation, an alteration of the functions of the nervous system; and, lastly, the blood that supports the organs, and the nervous system that animates them, having suffered a general injury, a constant though not always appreciable modification of these organs in their function or in their texture."

The advocates of each theory construe the phenomena of the latent period in accordance with their peculiar views: thus, while the humoralist regards it as the time intervening between the absorption of the poison and the manifestation of its effects on the great nervous centres—the advocates of the opposite theory consider that "the symptoms which characterise this period, whether they be slight, or whether they be severe, indicate a disturbance affecting primarily the nervous system.\*

Again,—“We are not of opinion that the time between exposure to contagion and the formation of the disease thereby caused, is a period of health: the nervous system was affected previous to any disorder of the circulating system.”†

From these extracts it will be seen that it is to the explication of the phenomena of the access and latent period of fever, and not to the *formed* disease, that each theory is to be applied, and its agreement with these phenomena tested.

This narrowing of the question deprives the humoralist of all support from the fact of changes detected in the blood subsequent to the latent period, since these may be owing to the changes in the nervous system; while, on the other hand, it reduces the available arguments for the nervous theory to two. That from the analogy of the morbid impression of contagion to the action of certain poisons—“such instantaneousness of action being supposed to be incompatible with the previous absorption of a poison into the circulation;” and, that deduced from the fact, that “a single mental shock often produces protracted disease, without the presence of any known source of the febrile poison.”

By thus limiting the dispute, much is given up by the humoralist; since he holds, “that the fluidity or diffidence of the blood, and the violent colour observed in typhus, is not the result of the disease, but, on the contrary, that they are the immediate effects of the specific cause of the fever;”‡ while, on the contrary, it is on the phenomena of the access that the very strongest arguments for the nervous theory are founded.

Passing by the many writers who have rested satisfied with stating their opinions of the origin of fever, without giving the grounds upon which they are founded, we shall examine the arguments for the nervous theory contained in Sir H. Marsh's able paper on the Origin of Fever,§ which are rested upon a number of histories of the access of the disease, which Dr. Tweedie has pronounced to “contain a body of evidence which should alone decide the question of the contagiousness of fever.”

It will be our endeavour, as advocating a humoral theory, to shew that the evidence does not support the conclusions of its distinguished author. These conclusions are founded upon a supposed analogy of the morbid impression of contagion (or infection) to the action of certain powerful narcotic poisons which is supposed to be exerted upon the nervous system immediately, and not through the circulation. “Though there can be little doubt,” says he, “that

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\* Marsh. Dublin Hospital Reports, Vol. IV.

† Barker and Cheyne's Report.

‡ Vide Rostan's Clinical Lectures on Typhoid Fever, in Johnson's Review for January, 1841.

§ Dublin Hospital Reports. Vol. IV.

prussic acid, when applied to the surface of the body, is ultimately absorbed, yet the rapidity of its action leads to the conclusion, that its first and instantaneous effect is on the nervous system." And Dr. Law, in arguing for a *mental* origin in one of his cases, in which the person was exposed to contagion before and at the time of seizure, says, "How are we to explain the mode of this individual's attack of fever? If we are to suppose it was contracted from exposure to contagion, we would avail ourselves of the argument of the toxicologist, who reasons that, from the very short period of time in which some poisons exhibit themselves in the system, these poisons affect the system through the medium of the nerves, rather than through the circuitous route of the circulation."

This theory of poisons being assumed, the analogy of the action of infection is thus stated by Sir H. Marsh. "From these facts it appears that the poison of contagion produces its effects *with the same rapidity as the narcotic poisons to which we have alluded*. Headache, debility, sickness of stomach or vomiting, are among the symptoms first perceived; these sensations, with the rapidity of an electric shock, are at the instant produced," &c.

This specious argument from analogy will be somewhat weakened by the following considerations:—

1. It is by no means proved, that any poison, however rapid, produces its effects upon the system, without being received into the general circulation, or before it can be carried to the brain through the medium of the circulation.

Müller's\* conclusion upon this question is—"These experiments, as well as many others instituted by well-known physiologists, prove that, before narcotic poisons can exert their general effects on the nervous system, they must enter the circulation." And again,—"*The rapid effects of prussic acid can only be explained by its possessing great volatility and power of expansion by which it is enabled to diffuse itself through the blood more rapidly than that fluid circulates; to permeate the animal tissues very quickly, and in a manner independent of its distribution by means of the blood, and thus to produce the peculiar material changes in the central organ of the nervous system more rapidly in proportion as it is applied nearer to it.*" But even this explanation of Müller's—while it falls very far short of furnishing the desired analogy—would seem incorrect, since Mr. Blake has found that the poisonous effects of prussic acid in a large dose introduced into the stomach will not take place so long as the circulation through the vena porta is carefully interrupted. He even found that, on the effects of the poison being produced by removing for an instant the impediment to the circulation, the animal could be recovered upon the circulation being again stopped, though the three drachms of prussic acid was still in the stomach. Mr. Blake's conclusions from his interesting experiments are\*—

1. That the time required by a substance to permeate the capillary vessels may be considered as *inappreciable*.
2. That the interval elapsing between the absorption of a substance by the capillaries and its general diffusion through the body may not exceed nine seconds.
3. That an interval always more than nine seconds elapses between the introduction of a poison into the capillaries or veins and the appearance of its first effects.
4. That if a poison be introduced into a part of the vascular system nearer the brain, its effects are produced more rapidly.
5. That the contact of a poison with a large surface of the body is not suffi-

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\* Elements of Physiology, by Baly. Vol. I. p. 246.

† Edinb. Med. and Surg. Journal, Vol. 53.



the imbibition of the poison, and the first febrile movement; in other words, the length of the latent period—the severity of the disease, and the facility with which infection is received and communicated, will depend upon the relative power of the poison, and its combination with one or more of the foregoing predisposing and exciting causes.

Thus, the continued imbibition of the poison will sometimes, apparently without the co-operation of any accessory cause, result in an attack of fever. This, however, is a very rare case, as though deranged health, and particularly disorder of the receiving functions, may exist, the poison is in this case usually eliminated from the blood, unless the balance of forces in that fluid be disturbed by some one or other of the exciting causes.

The occurrence of the exciting cause may be, or may not be, accompanied by exposure to contagion. In the case of nurses, and the other attendants of the sick, some single exposure being marked by the presence of an exciting cause, it has been supposed that the infection was then and there received into the system, when, in reality, it was before latent, and only rendered active by the *circumstances accompanying* this particular exposure. Again, when the occurrence of the exciting cause is not attended with exposure to infection, the fever is often wrongly attributed to cold, excess at table, mental emotion, &c., the latent presence of the predisposing contagion not being recognised by the patient, and sometimes, as we have seen, being denied by the physician.

The exciting cause may act, not only by determining the occurrence of fever, but also by shortening its latent period.

This is a frequent effect of exposure to infection. "In these cases, the ascertained laws of incubation," says Fergusson, "will so far be set at nought, that a terrified patient will not only fix the precise moment of infection, but will actually sicken prematurely with small-pox, (a latent infection must of course have been previously received), through the spectacle of the disease in the person of another, or through the disgust (and nothing worse), of an excremental smell, strongly affecting his alarmed imagination, or through the same impression, he may fall down the victim of an impossible contagion, like that of yellow fever."

The apparent shortening of the latent period of morbid poisons, seems to occur under these circumstances:—

1. A strong impression made on the nervous system at the time of exposure. If this be so powerful as to affect seriously the vital principle, the effects of the poison will follow with proportionate rapidity. The poison of ague, usually so long latent, affords a good illustration:—Dr. G. Bird relates, "that being employed in some experiments upon the gas in marshes (near Woolwich), having suddenly disengaged a quantity of most offensive gas, he was seized with nausea; and on the day following, with intermittent fever."

A similar instance, in his own person, is related by Mr. Evans; and another, in which death followed in forty-eight hours. *In this last case, the blood was found fluid.\**

2. A less powerful impression upon the nervous system may accompany exposure, and be followed by a latent period, apparently shortened, but admitting of the supposition of infection previously latent. Several of Sir H. Marsh's cases afford illustrations of this fact. And it is very probable that exposure to contagion in this way, often produces merely the same effect as an exciting cause, that cold, or any depressing agent would exert.

3. The circumstances accompanying exposure to one kind of poison, instead of acting as accessories to the action of that poison, may cause the immediate action of another, previously latent.

This is the only reasonable mode of explaining the cases of irregular contagion,

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\* On the Endemic Fevers of the West Indies.

cold, wet and other exciting causes of the disease, the time and circumstances of exposure to contagion having been entirely forgotten. Cases of this kind, *which are by far the most numerous*, throw but little light on the origin of fever. It is only by a careful observation of facts of occasional and rare occurrence, such as those recorded in this paper, in which the effects of contagion are well marked and striking, that we can hope to obtain certain and satisfactory results."

There is much truth in the foregoing passage, especially in that part of it which assigns to contagion the action of a *predisposing cause*; but how can this view be reconciled with Dr. Marsh's own theory, that the action of contagion is an "injurious impression upon the sentient extremities of the nerves?" and how far is he justified in assigning the *cause* and *commencement* of fever to sudden and brief exposure, even by cases of rare occurrence, (exceptions he admits to the general rule), such as he has collected? These are questions deserving consideration. We shall return to the first when examining the argument for the humoral theory derived from the latency and cumulative property of the poison; but how do Dr. Marsh's cases support his opinions as to sudden exposure being the *cause* of fever? It is obvious that when it is committed, that the general rule is, "that no perceptible impression is made by contagion," we cannot admit the conclusion that the impression was the cause of the disease, except it appears that no other exposure took place; the more so since the medical and other attendants of fever patients in private houses, and where cleanliness and ventilation are properly observed, frequently perceive these impressions—arising from the odour of the patient or his excretions;—such impressions, however *sickening* at the time, seldom leading to any further ill-consequences; but of twenty-two cases adduced by Dr. Marsh, ten were nurses or porters of fever hospitals, seven were physicians, one a clergyman, and one appears merely to have suffered the nervous shock, as fever did not follow.

The remaining three appear to be unexceptionable instances of fever, arising from a single and concentrated dose of the poison, two, if not all of them being cases of communication by fomites, (usually containing a concentrated poison.)

But again, we have to enquire whether the moment of exposure was that of the *commencement* of the fever? since the argument rests mainly on "such instantaneousness of action of the poison as is incompatible with the idea of absorption into the blood." Here we might remark on the rapid diffusion of gaseous poisons through the blood, and appeal to Mr. Blake's experiments in proof that the poison may enter the circulation even before the impression is felt; but admitting that this impression is a purely nervous one—a shock, or "reaction," as it has been termed—"a resistance offered by the vital powers to chemical action"—it is *not* the commencement of fever. For it may end where it began; the impression may not, and very often is not followed by fever; and in many more cases goes off altogether for a longer or shorter period before fever commences. True, it may continue, especially in persons whose imagination has become alarmed—in which case some writers have attributed the imagination to the influence of the poison upon the nervous system—and in a manner hereafter to be explained, it may shorten considerably the latent period; but we repeat, this latent period will be found to exist in any case in which a *previous* imbibition of infection is not to be admitted. "The symptom," says Sir H. Marsh, "which is generally considered to mark the commencement of a febrile movement in the system, is that commotion of the nervous functions which has been technically termed a *rigor*." This commencement of the *febrile movement* is only mentioned in twelve of his cases, and in these it occurred in four at an interval of from one to two days, in six after several hours, and in two only it is said to have come on "a short time after" exposure to the poison.

The third consideration which may be urged against this analogy is, "that the poison with which contagion is compared is not *reproduced*." As this reproduction of contagion is one of the strongest arguments for the humoral theory, we

shall not dwell upon it here, but merely observe that the toxicological argument, while it sets up a forced and false analogy with poisons which are not reproduced, strives to weaken and destroy that which naturally exists between the infection of typhus and that class of morbid poisons to which it may be said to belong—the exanthemata. This has not escaped Dr. Marsh's observation, who admits that "the opinion that to maintain a protracted fever, an internal cause of disease (such as absorbed or generated morbid matter) is necessary, would arise from the phenomena which manifest themselves in the course of an exanthematous fever." But he meets this by the second of the objections we have enumerated to the humoral theory.

"Yet that to excite and maintain continued fever, an *abiding* cause is not necessary, might be proved in various ways, but the fact that a *single* mental shock often produces protracted disease, is decisive upon this point."

As Sir H. Marsh adduces no fact in support of the above assertion, turn we to another able physician who, in a recent paper adduces seven cases from his own experience, in proof of the opinions expressed in the following passages: \*

"We quite agree in the wisdom of the precaution of satisfying the absorbents, but deny that they are more the channels through which the morbid matter enters the system, in this instance, (fever from contagion), than they are in other cases where there is no reason to suppose either that they are in an unusual state of activity, nor if they were, can we discover any contagion to serve as a *materies morbi* for them to exercise themselves upon. These are cases in which a strong moral impression acts as a direct and immediate cause in the production of a fever, similar in all respects to one from contagion," &c.

And again:—

"We shall proceed to detail some cases of fever which seem to us calculated to throw some light upon the mode in which the first morbid impression is made upon the system in the production of the disease; and see how far these cases tend to confirm the opinion that fever is the result of a miasma conveyed to the system by the absorbents: or if it be not, in some cases at least, the effect of a *moral impression* acting upon the nervous system, and exhibiting itself in symptoms indicating a derangement of the functions of this system."

The advocate for the theory of absorption may reasonably require that in such cases the *materies morbi* shall not appear to have been within reach. But of five cases the subjects were exposed to infection, at or before the seizure. The sixth was not (as Dr. Law admits) a case of fever; and we have only one in which fever followed a mental shock, without evidence of infection at the same time existing. To explain away this case, a determined opponent of the nervous theory might adduce evidence of the general diffusion of the fever-poison through the atmosphere of a city, when fever is prevalent in it; he might maintain that at such times † "certain changes take place in the constitution of the atmosphere imperceptible to our senses, and eluding chemical tests, which predispose human bodies to febrile diseases in such a way, that circumstances which in ordinary times would only give rise to a catarrh, an attack of rheumatism, or even occasion no indisposition at all, will now in many individuals become the exciting causes of continued fever."

If it be said that this is begging the question, the humeralist takes higher ground, and asserts that such cases, instead of disproving, strengthen his own theory; inasmuch as he can shew that fever follows strong nervous impressions, in consequence of their lowering the vitality of the blood, and so favouring the transformations in that fluid upon which fever depends. He believes that ‡ "no other component part of the organism can be compared to the blood in respect of

\* Observations on Fever, by Dr. Law. Dublin Med. Jour. Vol. XIV.

† Prichard, on the Epidemic Fever of Bristol.

‡ Liebig, p. 360.

the feeble resistance which it offers to exterior influences. The blood is not an organ which is formed, but an organ in the act of formation; indeed, it is the sum of all the organs which are being formed. The chemical force and the vital principle hold each other in such perfect equilibrium, that every disturbance, however trifling, or from whatever cause it may proceed, effects a change in the blood. Every chemical action propagates itself through the mass of the blood; for example, the active chemical condition of the constituents of a body undergoing decomposition, fermentation, putrefaction or decay, disturbs the equilibrium between the chemical force and the vital principle in the circulating fluid: the former obtains the preponderance. Numerous modifications in the composition and condition of the compounds produced from the elements of the blood, result from the conflict of the vital force with the chemical affinity in their incessant endeavour to overcome one another."

He admits that "perhaps there are cases in which the modification of the blood is only secondary to a modification of the nervous system. If, for instance, under the influence of a strong mental emotion, this system being suddenly perverted in its action, ceases to exert its proper influence over the different organs in which the blood is elaborated, deposited, and receives new materials, must not that fluid itself become altered in its turn? If so, thence must arise a number of organic and functional derangements varying greatly, according to the mode and intensity of the primitive alteration of the innervation. In such cases we may observe to occur sporadically those same diseases, typhoid or other, that we have just now seen prevailing epidemically under the influence of manifest causes of infection of the blood."

To prove that Dr. Law's case belongs to this formula, let us place it by the side of another in which *precisely* the same mental impression, acting more intensely, produced death. Eliza J—, æt. twenty-six, was admitted under Dr. Law's care, March 28, 1836. She had been in perfect health a week since, when, on missing a piece of linen which had been committed to her care to make shirts, from the apprehension that her honesty would be called in question, she was seized with a violent rigor and sickness, which confined her to bed ever since. Petechial fever, with prominent hysterical symptoms, followed. She recovered with difficulty and slowly.

Sometime ago, I was present at the examination (*post mortem*) of a man who died suddenly under the following circumstances.

He had committed a very trifling theft, for which he was apprehended and carried before a magistrate. He was a person rather above the lower order, and manifested great shame and grief at this exposure. While sitting before a table waiting for his case to be called on, he leaned his head forward on the table and was observed to snore; in a few minutes, the sound of his breathing ceased, and on raising his head, those near him found that he was dead. It was supposed, that apoplexy was the cause of death, and the brain was first examined. It was, however, perfectly healthy. The other viscera were then carefully examined. The only one which discovered anything which could account for his sudden death, was the heart, which was distended with *dark fluid blood*.

Let us suppose that the mental impression had not been so intense in this case, and the life of the blood not so completely and suddenly destroyed,—what would have been the probable consequence? This question is answered by a comparison of the two histories. In the last, the vitality of the whole circulating mass was destroyed, and the symptoms were those of a brain suffering the influence of a *strong narcotic poison*. In the other, the livid, petechiæ, spongy, and bleeding gums, &c. showed to what an extent the vitality of the blood had been destroyed. The immediate occurrence of a rigor shewed that the self-generated poison had

reached the nervous centres, and that the struggle had commenced which was to end with either the death of the whole mass of blood or the elimination from it of the portion so affected. It is worthy of remark, (and is noticed by Dr. Law) that the rigor was immediate,—not after an interval of hours or days, as in cases of exposure to infection, in which the operation of the poison is gradual and often (generally, indeed,) accumulative.

In fine, typhus, or a disease resembling it, but differing, according to Dr. Cheyne, in the very important particular that it is not communicated by contagion—in other words, that the poison is not *reproduced*—is but one of three modes, or degrees, in which the blood suffers from a strong mental impression. It may be killed at once, or it may suffer in a degree insufficient to produce *formed* disease—loss of appetite and depraved secretions, with slight derangements of animal heat, being perhaps the only indications of the injury it has received,—or it may act upon the system in a manner similar to the fever poison. But this cannot be said to prove that the fever poison acts by producing a moral impression; and, therefore, instead of agreeing with Dr. Law, that “even in cases where there was most reason to suspect absorption, where a person having exposed himself to contagion, fasting,—and then contracted the disease,—even here the symptoms exhibited by the disease so resemble those where there is no possibility of suspecting infection, that we cannot but believe that the mode of absorption is the same in both cases, and that as it is not absorption in the one case, neither is it in the other,”—instead of going to this length of denying the existence of a *materies morbi* altogether, we would reduce the two cases to the same formula by an opposite method. As thus: violent nervous shocks kill the blood or modify it, and occasionally produce fever. Contagious and other miasms also, in some rare instances, kill the blood, and, in general, modify it, so as to produce fever. But they may do so without causing a nervous shock. Therefore, they act *directly* on the blood, by being absorbed into that fluid and not through the intervention of any derangement, functional or otherwise, of the nervous system.

The principal arguments for the nervous theory derived from the mode of access of fever, having been examined, we shall submit some of those which tend to support a modified humoral theory, and then offer a rationale of the action of the causes of fever in accordance with this theory.

The explication of the accession of the disease having been taken as a text of the opposite theories, we are deprived of any support from two arguments which have been much used by humoralists: viz. the changes which the blood undergoes in the course of fever, and the production of fever or a disease perfectly analogous, by the introduction of substances into the circulation.

Another argument, of a similar kind, is derived from the known power, sources which ordinarily produce fever, to kill the blood at once when their poison is introduced into it in sufficient quantity. We give the fact on the highest authority.\* The inference has been met by the toxicological argument already considered, and by a distinction asserted between mephitic poison and the fever poison. This distinction we shall examine along with the source itself, hereafter.

But there are certain peculiarities in the action of the febrile poison which in their general character resemble other morbid poisons, and favour the idea of its absorption into the blood.

The first of these is its occasional latency in the system, in which it will lurk for a longer or shorter period, until called into action by some accidental cause.

“In several instances,” says Dr. Graves,† “I have observed that certain diseases, which seemed to have been lurking in the constitution, may suddenly

\* Christison on Poisons, p. 700, 2nd edition.

† Lectures, London Medical Gazette, vol. III. N.S. p. 186.

make their appearance in consequence of the operation of causes apparently unconnected with the disease in question . . . . . I have witnessed several bad cases of bad secondary venereal, in which the attack was traced to excessive fatigue, or a common cold. You will also meet numerous examples of an analogous fact among fever patients: examine them, and you will learn that in a majority of cases their disease arose from exposure to cold. One person fatigues himself by too much exertion in business, and gets an attack of spotted fever; another attributes his disease to over-anxiety; some to intemperance, and some to fright. In all these cases, it is very probable that the poison of fever has been lurking for some time in the system, and has been called into active existence by the operation of some sudden accidental cause, as fright, fatigue, intemperance, or cold."

Something similar, Dr. Graves justly observes, is remarked in the case of the Irish labourers employed during summer and autumn among the fens of Lincolnshire (and we may add Cambridgeshire). During their stay in England, they appear free from disease; but on their return home, if they happen to be exposed to wet, fatigue, or the derangements of health consequent on intemperance, they are very often seized with intermittent fever.

He continues, "Does it not often happen, that many of us escape fever although exposed to its contagion month after month? Do we not go on for years untouched, although subject every-day to the imbibition of the poison? and do we not, rendered bold by our impunity, consider ourselves, as it were, fever proof, until some accidental cause convinces us of the contrary, by giving rise to a sudden and violent attack? Who is there that has not observed this repeatedly among the students attending a fever hospital?"

Similar proof of the latency of the fever poison is afforded by the cases recorded by Lind, of sailors, who apparently escaping from the fever which was raging on board, went ashore, and in some time afterwards, in consequence, apparently, of exposure to cold or dehauchery, were attacked, *not* with the fever prevailing there, but with that of the ship they had left. In this respect, then, the febrile poison resembles other morbid poisons.

Again: *it is a cumulative poison*. The exposure of a single moment is probably insufficient, in any case, to cause fever. A few inspirations may accumulate sufficient in cases of great concentration of poison; but there is abundant proof that daily and continued imbibition of the poison is, in general, requisite. Thus, we find the attendants on the sick attacked in proportion to the frequency of their approaches to the infection, the very reverse of what would be the fact if the poison were *not* cumulative, since it is a law constantly observed, that agents which act by single impressions lose their power of producing those impressions in proportion as they are frequently repeated. It is true that some eminent writers aver this of infection, as Dr. Copland, who says, "when a person has escaped infection upon the first or the earlier exposures to several infectious maladies, he will generally continue to possess an immunity, unless circumstances should occur to increase his predisposition." Observations made on a large scale, however, tend to disprove this, as regards typhus.

Thus, when fever prevailed during the retreat of the British army through Holland, we are informed by Dr. Fergusson,\* that few, indeed, of the medical staff escaped the typhoid contagion; and, again, in the retreat from Talavera to the confines of Portugal, it was seen that the *best seasoned* of the medical staff were the principal sufferers. Dr. Christison, too,† (a solidist) maintains that it is not improbable that the severity of the disease bears some proportion to the *amount* of exposure."

And . . . . . "In many instances, fever breaks forth apparently from gradual

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\* Edinb. Med. and Surg. Journal, No. 112.

† Library of Medicine, Art. Fever.

charging of the constitution under *constant exposure* to the morbid emanations and without any other co-operating cause."

This is very like humoralism, as is the illustration given by Dr. Haygarth. "A pint of yeast will excite fermentation in a barrel of ale, but a hundredth or a thousandth part would not have the same effect."

Again. The *reproduction of the poison of contagion*, is a fact "not dreamt of" in the philosophy of the solidists. Here their analogy is at fault, for the poisons from whose action it is derived are not reproduced. Neither will any supposable impression upon the nervous system explain the continued reproduction of the same febrile phenomena, and the same miasm through an indefinite series of individuals. We have admitted the production of fever by a strong mental impression. We have endeavoured to reconcile this occurrence with the theory which refers the source of fever in all cases to the blood. We have, however, noticed the fact, that such fever does not reproduce itself, and referred to the testimony of one, whose accuracy of observation has seldom been surpassed, who says, "The most remarkable part of the disease is that it does not spread. I have no recollection of a second case of this kind of fever occurring in a family."<sup>\*</sup>

But the humoral theory has its analogy for the reproduction of the poison.† "The mode of action of a morbid virus, exhibits such a strong similarity to the action of yeast upon liquids containing sugar and gluten, that the two processes have been long since compared to one another, although merely for the purpose of illustration. But when the phenomena attending the action of each respectively, are considered more closely, it will in reality be seen that their influence depends on the same cause."

Now, when yeast is introduced into a mixed liquid, containing both sugar and gluten, such as wort, the act of decomposition of the sugar effects a change in the form and nature of the gluten, which is in consequence also subjected to transformation. As long as some of the fermenting sugar remains, gluten continues to be separated as yeast, and this new matter, in its turn, excites fermentation in a fresh solution of sugar or wort. If the sugar, however, should be first decomposed, the gluten which remains in solution, is not converted into yeast. We see, therefore, that the *reproduction of the exciting body* here depends:—

1. Upon the presence of that substance from which it was originally formed.
2. Upon the presence of a compound, which is capable of being decomposed by contact with the exciting body.

If we express, in the same terms, the reproduction of contagious matter in contagious diseases, since it is quite certain that they must have their origin in the blood, we must admit that the blood of a healthy individual, contains substances, by the decomposition of which, the exciting body or contagion can be reproduced. It must further be admitted, when contagion results, that the blood contains a second constituent, capable of being decomposed by the exciting body. It is only in consequence of the conversion of the second constituent, that the original exciting body can be reproduced.

When a quantity, however small, of contagious matter, that is of the exciting body, is introduced into the blood of a healthy individual, it will be again generated in the blood just as yeast is reproduced from wort. Its condition of transformation will be communicated to a constituent of the blood; and in consequence of the transformation suffered by this substance, a body identical with, or similar to the exciting or contagious matter, will be produced from another constituent substance of the blood. The quantity of the exciting body newly produced, must constantly augment, if its further transformation or decomposition proceeds more

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\* Dr. Cheyne's Account of Fever from Mental Causes, in Sir H. Marsh's Paper on the Origin of Fever.

† Liebig.

slowly than that of the compound in the blood, the decomposition of which it effects."

These substances are the organic matters existing in the blood, either in the state of transition from blood into the constituents of the tissues, or from food into blood. Which changes, it is argued, cannot take place without the formation in the blood of new compounds, which require to be removed by the organs of excretion.

"When the organs of secretion are in proper action, these substances will be removed from the system; but when the functions of these organs are impeded, they will remain in the blood, or become accumulated in different parts of the body. The skin, lungs, and other organs, assume the functions of the diseased secreting organs, and the accumulated substances are eliminated by them. *If when thus exhaled, they happen to be in the state of progressive transformation, these substances are contagious, that is, they are able to produce the same state of disease in another healthy organism, provided the latter organism is susceptible of their action; or in other words, contains a matter capable of suffering the same process of decomposition.*

"In the abstract chemical sense, reproduction of a contagion depends upon the presence of two substances, one of which becomes completely decomposed, but communicates its own state of transformation to the second. The second substance thus thrown into a state of transformation, is the newly-formed contagion.

"The second substance must have been originally a constituent of the blood; the first may be a body accidentally present.

"If both be constituents indispensable for the support of the vital functions of certain principal organs, death is the consequence of their transformation. But if the absence of the one substance, which was a constituent of the blood, do not cause an immediate cessation of the functions of the most important organs, if they continue in their action, although in an abnormal condition, convalescence ensues. In this case, the products of the transformations still existing in the blood, are used for assimilation, and at this period, secretions of a peculiar nature are produced."

Having submitted this chemical analogy of the reproduction of contagion in the words of the highest living authority on animal chemistry, it only remains to attempt a rationale of the action of the causes of fever, in accordance with its principles, which may be thus stated:—1st, That the principal character of the blood consists in its component parts being subject to every attraction; the chemical forces of this fluid, and the vital principle holding each other in such perfect equilibrium, that every disturbance, however trifling, or from whatever cause it may proceed, effects a change in the blood.

2nd. That bodies, the elements of which are in a state of decomposition or transposition, when produced from the blood, as contagions are, will communicate *their state* to the sound blood, exactly as gluten in a state of decay or putrefaction, (yeast) causes a similar transformation in a solution of sugar and gluten (wort.)

Assuming then, that the primary action of the febrile poison is upon the blood, there can be but one *essential cause of fever*, viz., *The introduction of the poison into that fluid.* Its activity, or the occurrence of the peculiar transformations which it has a tendency to excite in the blood, will be determined by the existence of certain accessory or accidental causes, which disturb the equilibrium between the chemical forces in the blood and the vital influence; either by their action on the blood, causing the increase of compounds subject to those transformations which the poison produces—as depraved diet, bad air, &c.; or by their action on the nervous system, withdrawing permanently or temporarily more or less of its influence, and so favouring the chemical action of the poison. Such are the depressing effects of cold, fatigue, anxiety, debauchery, disgust, fear, &c. These are usually termed *exciting causes*, the former *predisposing causes*.

The occurrence of fever—the length of the interval which may elapse between



the imbibition of the poison, and the first febrile movement; in other words, the length of the latent period—the severity of the disease, and the facility with which infection is received and communicated, will depend upon the relative power of the poison, and its combination with one or more of the foregoing predisposing and exciting causes.

Thus, the continued imbibition of the poison will sometimes, apparently without the co-operation of any accessory cause, result in an attack of fever. This, however, is a very rare case, as though deranged health, and particularly disorder of the receiving functions, may exist, the poison is in this case usually eliminated from the blood, unless the balance of forces in that fluid be disturbed by some one or other of the exciting causes.

The occurrence of the exciting cause may be, or may not be, accompanied by exposure to contagion. In the case of nurses, and the other attendants of the sick, some single exposure being marked by the presence of an exciting cause, it has been supposed that the infection was then and there received into the system, when, in reality, it was before latent, and only rendered active by the *circumstances accompanying* this particular exposure. Again, when the occurrence of the exciting cause is not attended with exposure to infection, the fever is often wrongly attributed to cold, excess at table, mental emotion, &c., the latent presence of the predisposing contagion not being recognised by the patient, and sometimes, as we have seen, being denied by the physician.

The exciting cause may act, not only by determining the occurrence of fever, but also by shortening its latent period.

This is a frequent effect of exposure to infection. "In these cases, the ascertained laws of incubation," says Fergusson, "will so far be set at nought, that a terrified patient will not only fix the precise moment of infection, but will actually sicken prematurely with small-pox, (a latent infection must of course have been previously received), through the spectacle of the disease in the person of another, or through the disgust (and nothing worse), of an excremental smell, strongly affecting his alarmed imagination, or through the same impression, he may fall down the victim of an impossible contagion, like that of yellow fever."

The apparent shortening of the latent period of morbid poisons, seems to occur under these circumstances:—

1. A strong impression made on the nervous system at the time of exposure. If this be so powerful as to affect seriously the vital principle, the effects of the poison will follow with proportionate rapidity. The poison of ague, usually so long latent, affords a good illustration:—Dr. G. Bird relates, "that being employed in some experiments upon the gas in marshes (near Woolwich), having suddenly disengaged a quantity of most offensive gas, he was seized with nausea; and on the day following, with intermittent fever."

A similar instance, in his own person, is related by Mr. Evans; and another, in which death followed in forty-eight hours. *In this last case, the blood was found fluid.\**

2. A less powerful impression upon the nervous system may accompany exposure, and be followed by a latent period, apparently shortened, but admitting of the supposition of infection previously latent. Several of Sir H. Marsh's cases afford illustrations of this fact. And it is very probable that exposure to contagion in this way, often produces merely the same effect as an exciting cause, that cold, or any depressing agent would exert.

3. The circumstances accompanying exposure to one kind of poison, instead of acting as accessories to the action of that poison, may cause the immediate action of another, previously latent.

This is the only reasonable mode of explaining the cases of irregular contagion,

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\* On the Endemical Fevers of the West Indies.

related by Marsh and others, of typhus, received from small-pox patients, scarlatina from typhus, *ague* from typhus, and typhus from puerperal fever.

Some of these cases we might truly term *impossible* contagion, unless explained by the supposition of a previously latent poison. The facility of reception of the disease depends upon two conditions; 1st, the presence in the blood of compounds capable of undergoing the transformation of the poison. This constitutes susceptibility; and when it exists in a great degree, and conjoined with, 2nd. diminution of the vital influence, it constitutes the highest degree of predisposition to disease. The proneness which the living body may thus acquire to infection, may be so great (as seen in crowded collections of wretched beings in large cities, deprived of air, light, fuel, clothing, and sustenance), as to resemble that incapacity of resisting the progress of decay, (a true contagion) which is exhibited by dead animal matter, placed in a putrefying atmosphere.\*

The severity of the disease depends partly on the above circumstances, but principally on the *dose* of the poison. This may be illustrated by comparing small-pox and measles, received in the natural mode, with the same diseases communicated by inoculation. Individuals may suffer as severely from the latter as the former, but the generality of persons do not. The following passage in a recent work of great ability offers inducements to consider this subject somewhat in detail:—"The modifications in disease dependent *on the mode of introduction* of the morbid cause, is, however, a subject too difficult for me to grapple with, and the observations are too few to offer any precise result. Cruveilhier, in the article 'Phelibitis Dict. de Med. et Chir. Prac.' points out the increased intensity of effect when pus is introduced into the circulation at once, and as compared with that caused by gradual absorption from an abscess. The modification which small-pox undergoes by inoculation, as compared with that malady acquired by inhalation, is very remarkable."† From this last observation it would appear that the author considers the modification of small-pox as not *consistent* with Cruveilhier's observation. Such an idea must have arisen from confounding the *matter* of the small-pox pustule with the *poison* of small-pox,‡ when in reality it only contains the poison in common with the blood and all its excretions.

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\* A fact noticed by Parent Duchatelet, in some infectious places in Paris; and by Senac, see Wilson Philip on Fevers, Vol. I, page 210.

† Ferguson on Diseases of Women, page 104.

‡ The distinction between them is well stated by a writer in the 'Edinburgh Medical and Surgical Journal,' Vol. LIII, p. 206.

"Rayer mentions 'pus and miasm' as two distinct agents which should never be confounded. If the contagious effluvium and the matter of the pustule were one and the same thing, how could we account for the circumstance of the *fetus in utero* becoming affected with the small-pox? Besides, Dr. Waterhouse and others have recorded cases in which persons exposed only to the exhalations from the blood of small-pox patients have been afterwards attacked by the disease."

The fact marked in italics would also serve to prove the distinctness of the poison from the ponderable matter of lues. Other considerations would lead us to extend it to all morbid poisons. For

1. The peculiar action of a morbid poison on the blood presumes its possessing great diffusibility in that fluid; and this quality is known to exist in all substances universally, as the cohesion of their atoms, or in other words, their ponderability.

2. The power of permeating tissue depends upon the same condition; and while we find that all the morbid poisons *may* act without abrasion of surface, we find that those which do appear to permeate the skin, act with more certainty if presented at a temperature which admits of their volatilization. This is noto-

The poison of small-pox is equally subtle and imponderable with the other morbid poisons, *an aura*, present it is true in the matter of the pustule, but equally present and equally capable of communicating the disease in the gaseous exhalation which arises from the blood drawn from a varolous patient. The same is

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riously true of small-pox, as the dissection of subjects who have died of this disease, though not harmless, is much less infectious than the handling of the living body. It is also well known that the examination of any dead body is most likely to be followed by the bad consequences of a dissecting wound, when the body is warm and contains the halitus of its cavities uncondensed. . . . . the next in point of danger being that which is next in diffusibility; the exposure of the surface of the hands to the liquid contents of the serous cavities in particular cases, especially in puerperal peritonitis.

I need only refer to Mr. Stafford's paper on this subject in the 20th Vol. of the "Medico-Chirurgical Transactions" for instances of the imbibition of this poison in puerperal and other cases, without any abrasion of surface. The following circumstance bearing on this subject occurred to myself a short time since.

I was sent for to see a lady in the latter end of her first pregnancy, who I was informed had been for some time suffering much painful anxiety of mind and fatigue of body, and had been laboriously occupied with the arrangements for entering on a new residence, which had kept her constantly upon her feet. For some weeks the legs had swelled considerably, and pitted under pressure. This swelling had rather suddenly increased, and extended to the thighs and pelvic region, with a feeling of stiffness and inability to walk up stairs. Her pulse was quiet, tongue clean, and general health apparently perfect. This was on the morning of the 21st of December. All appeared to go on well, and the swelling seemed to diminish a little till the night of the 23rd, when she slept none, and was attacked with vomiting. On the morning of the 24th I found her remarkably changed; the countenance haggard and anxious, with a quick irritable pulse, thickly furred tongue, restlessness, and vomiting of a dark green fluid. Labour pains came on at 10 a.m. and continued regularly during the day. About 10 p. m. she had an attack of convulsions, and in a few minutes another. Delivery was immediately effected by the assistance of the forceps. It was observed that the labia had since morning become very dark coloured, and the perineum tore upon the slightest stretching like wet brown paper, but *without bleeding*. The delivery of the child was followed by that of a second, unassisted; both being quite dead and flaccid. The uterus contracted firmly, and there was no hæmorrhage; but the patient became less and less capable of being roused, the abdomen enormously distended, respiration laborious, and she sunk at 2 a.m. three hours after delivery.

About four in the evening of that day, I felt a hot painful itching upon the back of my right hand, where I perceived a small transparent vesicle. In a couple of hours I had pain in the axilla, and an uncomfortable, chilly feel. I applied a number of leeches to the hand and took an emetic, followed by calomel and James's powder. These means removed all unpleasant general symptoms, but the part itself did not recover so speedily, as an ill-conditioned obstinate sore formed on the hand which was long in healing. Not the slightest scratch or puncture existed before the application of the poison.

But whence this poison? It was ingeniously suggested to me by my friend, Dr. Clifford, who assisted me through this most distressing case, that the vital powers being over-taxed for the nutriment of two children, had given way, and this decomposition before death was the consequence. Perhaps this is the only explanation which can be admitted.

But I am inclined to believe that the whole was the effect of phlebitis, by which a morbid poison was generated, which produced death in the *fætuses*, dis

true of measles, which has been propagated over and over again by Home, and others, by inoculation with the *blood* of the patient, and with the same result,—a milder form of disease. By thus separating the poison from its vehicle, the difficulty of explaining the modification of these diseases by inoculation is got rid of, since, to recur to the simile of Dr. Haygarth, a hundredth part of a pint of yeast will not excite fermentation in a barrel of ale, though a pint will do it; and it must be obvious that a single inspiration in the immediate neighbourhood of a small-pox patient may introduce more of the *aura* into the blood than the direct introduction by inoculation of an atom of matter, in which only a small proportion of the poison can be present. The correctness of this view could be readily tested; and if it were found that, as in typhus, the amount of exposure had an influence in determining the severity of the attack of small-pox, the explanation must be admitted. One fact is strongly presumptive in its favour; it is the less complete removal of the susceptibility to the disease after inoculation than after natural small-pox. The analogy to the fermenting process is too obvious to need suggestion, and the same remark holds good of fever, short and mild fevers being notoriously more prone to recurrence than a long and severe form of the disease.

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organization in the mother, and being presented under circumstances favourable to absorption, rapidly permeated the skin to which it was (only for a few moments) applied. Every thing was favourable to the occurrence of crural phlebitis and to the absorption of the poison into the patient's system, as will appear from the history of the case, without again enumerating particulars. Dr. Wilson's paper, in the "London Medical Gazette" for April 1838, proves that crural phlebitis in women is not confined to the puerperal state.

*Note.*—It was not till after the section upon the Theory of Fever had been sent to press, that I met with Dr. Hodgkin's remarks upon the nature of the fever in his recently published volume on diseases of the mucous membranes Lecture 23rd. "I shall now proceed to state what I have conceived to be the condition of the system which constitutes fever, whether it be produced by the influence of some local inflammation or lesion, or exist by itself, independently of such exciting cause. This latter form, however, if it have an existence, I regard as of much rarer occurrence than has generally been supposed. *Fever, I imagine, to depend on the suspension, or at least very considerable interruption of that process by which during health, the various parts of the system are continually undergoing a change, the old materials being removed, whilst others are substituted in their place. . . . The process of incessant and universal change of the particles constituting our frames is what we imply by the terms nutrition and "interstitial absorption," it is not merely in its character closely allied to secretion, they are, I believe, essentially parts of the same function," &c.* This view is supported by strong facts derived from the phenomena of fever, and by much ingenuity of reasoning. And Dr. Hodgkin proves, *at least*, that such an arrest of the molecular change takes place with reference to the secretions and nutrition of the body in fever. Thus far, there is a coincidence between his theory and that advocated in the foregoing section; the same suspension of secretion and accumulation of organic matters in the system, being part of both explanations, and the phenomena of solution or crisis being explained similarly in both.

The difference is as to the *initiator movement*. While Dr. Hodgkin would consider the *factor* of the disease to be in all cases a local lesion or inflammation, the theory of a morbid poison supposes it to be a *molecular change in the blood* caused by the dynamic force of the decomposing particles of the poison, from which arise disturbance of the process of innervation, and of the molecular changes of nutrition, interstitial absorption, and secretion.

The theory does not assume to *determine* whether the changes in innervation (such as rigor) which mark the commencement of *formed fever*, are the direct effects

SECT. 5.—*The Characters of the Disease produced by the Infectious Animal poison of Typhus.*

The argument for the foregoing theory of fever, would obviously be much strengthened if it could be made to appear that the phenomena of Typhus are so analogous to those of the other morbid poisons, as to entitle it to a place among "those special contagions, which do not amount to more than five or six, and are all comprehended under that class of which it is the general distinguishing characteristic to occur once only during the life-time of the individual;" in other words, to be classed with the exanthemata.

We find medical writers much divided upon the question whether the petechial eruption of typhus is a primary and essential, or a secondary and accidental character of the disease. We may refer to De Haen,\* Hoffman, and especially to Bruserin's elaborate argument for the former opinion, and for the consequent classification of typhus among the exanthemata; and among more recent writers the same view is ably supported by Dr. Copeland and Dr. Peebles, Dr. Roupell, and Dr. Davidson. Dr. Alison seems inclined to adopt it, though his language is reserved and cautious. "Such cases of spotted fever may be said to form the link that connects the order of fevers with that of the contagious exanthemata."<sup>†</sup>

If it be found that the analogy is complete in every essential particular, and that the objections which have been urged against the classification of typhus with the exanthemata are founded upon supposed discrepancies, which have no real existence, we shall be entitled to substitute for this cautious approximation, the decided definition of Dr. Peebles: "This contagious febrile eruption is an exanthematous affection, the production of human effluvia where society is placed in circumstances favourable to its developement, and should be considered the effect of a poison *sui generis*. It arises from a miasm, which generates in the human body an eruptive fever distinct from all others, as other exanthemata are distinct."<sup>‡</sup>

The first point of resemblance, and one much insisted on by the older writers, is the *primary* nature of the eruption. In this particular it differs from the petechiæ which occur in the advanced stage of many fevers, and cannot be considered essential to them. "The petechiæ," says Bruserius,§ "besides that they break out in all patients, or at any rate in by far the greatest number, as I have already said, likewise appear sooner in particular instances, generally about the fourth day, sometimes even earlier; but very seldom if ever at all delay breaking out beyond the seventh day, unless they be very anomalous, while the secondary and symptomatic ones appear much seldomer, and in fewer patients, nay, very late," &c.

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of the poison carried through the circulation to the nervous centres, or whether, as Dr. Hodgkin infers, from a conversion of Edwards' proposition, "since cold has the effect of retarding, especially that function by which particles to be rejected from the body are thrown off, a suspension of this process from another cause should be attended with a sensation resembling in a degree those caused by cold." This seems rather a doubtful conversion of Dr. Edwards' fact. I shall hereafter return to Dr. Hodgkin's ingenious speculations, merely observing for the present, that while some parts (see page 491) support a humoral theory, his theory will by no means explain the phenomena of infection as the humoral theory does.

\* Ratio Medendi. Vol. II. Chap. I.

† Edinburgh Medical and Surgical Journal. Vol. XXVIII.

‡ Idem. Vol. XLVII.

§ Institutes. Vol. III.

Hoffman\* also describes them as appearing "in nonnullis quarto vel circa septimum diem in dorso potissimum pectore et brachiis vel sine levamine maculae in aliis copiosiores in aliis pauciores coloris varii," &c. Modern observations are consistent with these. Thus, Dr. Barker, after taking much pains to prove by a reference to older authors, that this eruption was not peculiar to the Irish epidemic of 1817-18, says, "From a comparison of many cases, I would infer that it generally makes its appearance between the fifth and seventh days inclusive of the fever," &c.†

If we refer to descriptions of the jail or hospital fever, we find Monro enumerating the fourth, fifth, sixth, and seventh as the most frequent days of the measly eruption; and Sir J. Pringle states that he frequently saw them as early as the fourth or fifth day.‡

Another resemblance is presented in the phenomena attending the progress of the disease; more especially the attenuation which may be observed between the eruption and the affections of mucous membranes. In exanthematous typhus the same dry harassing cough is observed previous to the appearance of the eruption as in measles. On the coming out of the eruption this subsides, unless a catarrhal complication exists. Again, if the mucous membrane of the bowels be the seat of irritation, and a diarrhoea (whether the effect of the disease or of medicine exist) the eruption will fade. This is analogous to what has been observed in scarlatina,§ and it has been urged as an argument for the free use of purgatives in typhus, that they clear the skin from spots. In the definite nature of its progress, and its disposition to terminate critically and at once, typhus resembles the exanthemata as much as it differs from the intermittent and remittent fevers with which it has been confused and compared. Neither does it appear that when once the febrile movement has commenced it can be arrested any more than the action of other morbid poisons. Most of the cases in which this is supposed to have been done have been merely cases of strong nervous shock from exposure to infection, without evidence of the infection having been imbibed into the system.

The last resemblance upon which it is necessary to dwell, is the mode of communication.

The fact of typhus being communicated from one person to another, is a powerful argument for classing it among the *special contagions*. An examination (hereafter) of the circumstances which favour infection, will shew them to be the same in both, and the time at which they become infectious seems to be the same in both, viz. at and after the period of maturation or crisis. The argument adduced by Dr. Ferriar against the humoral theory, "that neither would a patient after recovering from a nervous fever, cease to infect others till the whole mass of his fluids were changed," is thus deprived of its weight.

The histories of patients admitted into our fever hospital afford frequent illustrations of this fact, as they constantly attribute their infection to some neighbour, or member of their family, who has returned home cured from hospital; and there is at present in the hospital a man who has suffered severely from this cause, having lately lost his wife by a typhous fever which commenced on one of his children, who was hugged and kissed by a man upon his discharge from the hospital after passing through a most severe typhus.

But as evidence on a large scale is to be preferred to individual instances, let us take Dr. Perry's very strong and satisfactory testimony to the fact with reference to both diseases.||

Into the fever house in Glasgow are admitted cases of measles, scarlatina and small-pox, and patients are very frequently sent in labouring under bronchitis,

\* *Medicinæ Rationalis*. Tom IV. p. 120.

† *Dublin Medical Transactions*. Vol. II.

‡ Monro on Hospitals, page 10; and Sir J. Pringle on Diseases of the Army, page 299.

§ By Fothergill, and others.

|| *Dublin Medical Journal*. Vol. X.

&c. &c. I found by experience that when the latter class of patients were sent into the convalescent ward, where they necessarily mixed with the others, almost all who had not previously had typhus fever were either seized with it before leaving the house, or returned soon after labouring under it. The period intervening between the time of their being sent to the convalescent ward and the attack being never less than eight days. Although means were taken to keep those recovering from small-pox, scarlatina, &c. in a separate room from those convalescing from fever, the rooms being adjoining the non-intercourse was incomplete, and the result was, that these diseases occasionally spread among the typhous convalescents, and the convalescents from small-pox and scarlatina caught typhus.\* He states that "the result of a trial of the plan of keeping non-febrile cases in the acute wards till able to go to their homes was, that *not one* so detained ever caught fever in the wards, or returned with it afterwards." Dr. Perry's statement is confirmed by Dr. Stewart, who says, "In fact, scarcely one of the hundreds dismissed from the acute wards ever returned labouring under typhus, though they had remained for a week or ten days in wards sometimes crowded to excess, while of the few who by mistake went into the convalescent wards, scarcely one escaped the disease, and several died."\*

Such are some of the most striking analogies between typhus and the class exanthemata; others not less important arise from a consideration of the supposed discrepancies which exist between the laws and phenomena of the two diseases.

Each writer who has opposed this classification of fever, has urged some objection or other which he considered fatal to it. We shall examine them in detail, and endeavour to show that they belong to two classes. 1. Those which apply to the exanthemata as well as to typhus; and 2. Those which *do not* apply to typhus, but to other fevers.

In both cases the argument from discrepancy must be ill-founded, as in the first the differences become analogies, and in the second, typhus, by being separated from other fevers, becomes more completely identified with the "specific contagions."

To commence with the latent period of typhus. Its variable length has been urged against the classification. That of the exanthemata appears to be equally so. In scarlatina it may extend from a few hours to twenty-one days, according to Dr. Williams and Dr. Maton. In measles from a week to a fortnight, and in small-pox from five to twenty-three days.

II. The eruption, it is said, is not invariably present. This objection is not as strong as it appears, and since it is admitted that the eruption of typhus has only very lately been attentively examined as a diagnostic character of the disease, we cannot think the question likely to be illustrated by the kind of testimony which some opponents bring to bear upon it.†

The answers to this objection are, 1. It is often present, though so indistinct as to escape a superficial examination. "On such occasions," says Dr. Barker, ‡ "*the suffusion of the eyes* is a pretty certain indication of its presence." "They sometimes," says Bruserius, § "lurk under the epidemics, scarcely perceptible, and are only seen through it on attentive examination; nay, they sometimes do not appear unless cupping glasses be applied, by which they are called out."

Similar is the observation made by Sir J. Pringle, || and repeated by Dr. Roupell, upon the arm on which a ligature had been applied for bleeding.

\* Edinburgh Med. and Surg. Journal, No. CXLV.

† Vide Dr. West's paper.

‡ Dublin Medical Transactions, Vol. II. Monro also remarks, that though many had no petechiæ, in all who were very bad the countenance looked *bloated*, and the eyes *reddish* and somewhat *inflamed*, page 12.

§ Institutes.

|| Page 300.

2. In the returns from which the comparative frequency of appearance of the eruption is deduced, there are two sources of error which have been well exposed by Dr. Davidson. The first is, that they contain a large proportion of cases *not* typhus; the other, that many of them entered hospital at an advanced stage of the disease, after the retrocession of the eruption.

Dr. Davidson observes that one fact powerfully supports the opinion that contagious typhus, in the great majority of cases, particularly in adults, is attended with the eruption, viz. that almost all the instances of fever which have occurred during the last six or seven years among the physicians, clerks, nurses, &c. of the Glasgow fever-hospital, have been accompanied with this exanthema. \*

The following remarks of Dr. Stewart on this subject deserve consideration.

"Nor can I consent without reserve to conclusions drawn from the alleged absence of eruption; for the fact I have already referred to (viz. that the eruption in typhus in Edinburgh was unheeded before 1632) shews how appearances may escape the eye of the most distinguished and practised physicians, when their attention is not particularly drawn to them. It is also well-known to many, that previous to a visit which Dr. Peebles made to the Glasgow fever-hospital, in the spring of 1835, the exanthema of typhus, then found to be of general occurrence, had neither been looked for nor registered in that institution, and was received as a new discovery." †

3. We reply that the occasional absence of the eruption is in truth an *analogy*. "For," says Burserius, "as the variolous fever, or the variolous disease unaccompanied with small-pox, sometimes occurs, I should not consider it at all absurd to suppose that the petechial fever may in like manner take place without petechiæ."

In another place this author remarks: "This is generally observed to happen when they prevail epidemically. But it does not occur so frequently and decidedly to the observation of any one as that of the inoculators. For not unfrequently at the usual time after the inoculation, a fever comes on which continues several days, and then goes off without being followed by an eruption of pustules. Who would not call it a variolous fever? ‡

I am acquainted with a family in which small-pox made its appearance, affecting different individuals in the following modes. One with confluent eruptions, another with scanty, two with variolous fever without eruption, and another with intense vomiting and delirium, but no subsequent fever or eruption.

The same occurrence of a peculiar fever without eruption, has been remarked in epidemics of measles, by Sydenham and others. Rayer states that Guersent has observed individuals in families where measles prevailed, exhibiting all the other symptoms of the disease except the eruption, and that he has himself several times seen cases in which the eruption was incomplete, and which might have been referred to the morbillary fever of Sydenham. §

Every one who has had any experience of epidemics of scarlatina, must have observed fever and sore throats of the same character as that of scarlatina, but without eruption, occurring in families in which this disease prevailed. Rayer quotes the testimony of a number of authors upon the subject, and Dr. Tweedie introduces it as a variety of the disease into his classification. This scarlatina sine exanthemate is very frequently met with in practice.

III. A want of uniformity of the character and time of appearance of the eruption has been alleged.

\* Essay. page 22. † Edinburgh Med. and Surg. Journal, Vol. LIV.

‡ Institutes, Vol. III.

§ On Diseases of the Skin.



"Of the varying characters of the eruption," says Dr. West, \* "almost every quotation has afforded an illustration, and we have seen the date of its appearance vary from the second to the seventeenth day."

We are by no means convinced that the subject has been *illustrated* by Dr. West's quotations, which appear to be descriptive not so much of typhus as of every other variety of fever. On the other hand, testimony is not wanting of observers who have explained these apparent irregularities in the character and periods of the typhus eruption, and reconciled their apparent inconsistency with an exanthematous theory of fever.

Such we meet in the following passage from Burserius's admirable chapter on petechial fever. "Le Roy also observes that there is some distinction between the primary and secondary petechiæ, which consists in the difference of their colour, namely, that the former are of a palish red and rosy colour, and in general break out in great numbers, principally on the loins and legs, that the latter on the contrary are generally of a purple colour, like deep red wine, and are sometimes also brown or black, and fewer in number."

But we must also remember that the primary ones break out soon, and when they are epidemic appear not only in all affected with the same disease, but are likewise very frequently combined with other diseases called intercurrent ones—for these last are not always wanting, as some contend—while on the other hand, the secondary ones break out later, and generally about the height or towards the end of the disease, and not in all patients, but only in those whose blood is so vitiated as to become almost putrid and occasion gangrenes here and there on the skin, or being thrown into violent commotion by a heating regimen and medicines, is effused into the spaces of the skin, *but not by the wisdom of Nature endeavouring to free herself from the noxious miasma*. Hence I would say that the primary differ from the secondary petechiæ, because the former arise from a peculiar and poisonous miasma, and the secondary from the crisis of the blood being deranged by the violence of the disease, or from its increased motion, or lastly, from a heating regimen having been employed." Such also we meet in Dr. Staberoh's paper on the eruption attending epidemic fever. In which he shows that not only do petechiæ of the ecchymotic or secondary kind occur after and *apart* from the exanthema, but that spots of these are capable of being converted into ecchymotic spots.† Attentive observation has convinced me that not only are the above statements correct, but that we may add that a third variety of late petechiæ occur in cases in which from diarrhœa or hypercatharsis in the beginning of fever the exanthema lurked under the epidemics. The conversion of this *indistinct eruption* into ecchymosis taking place, or the latter being superadded in the course of the disease, and *appearing to be primary*. A fourth variety is thus alluded to by Dr. Peebles; "Petechiæ may be mixed with the exanthema, and in some epidemics the exanthema has been prevented from showing itself by the disease passing so rapidly from the sthenic state to the putrid, that it has not had time to make its appearance."

Of course under any of the foregoing circumstances the late appearance of a petechial eruption is no argument for a want of uniformity in that of the exanthema. The frequency of occurrence of these secondary petechiæ is only an additional reason for believing that the two forms have been by many writers confounded together.

IV. It is objected, "That the disease often occurred more than once during the life-time of an individual."

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\* On Exanthematous Fevers. Edinburgh Med. and Surg. Jour. No. CXLIII.

† London Medical Gazette, Vol. I. N. S. p. 973.

The objection assumes that typhus confers no immunity from subsequent attacks and that the exanthemata do confer an immunity. The answer is, that experience warrants our belief in a considerable power of destroying the liability to subsequent attacks in typhus, and that, though there can no doubt of the exanthemata possessing this power, exceptions to it are frequent in all of them.

It must be admitted that in this country there is a general belief in the protecting power of a seasoning or initiatory fever, and though we rarely meet with a medical man who has not had typhus, we certainly meet with few indeed who have had it more than once. The nature of the subject does not admit of very precise proof. We can only obtain the *general results* of experience. Dr. Barker\* states as the results of his, "that he has for some time entertained the opinion that sufferers from fever attended with this eruption, if they are not altogether secured by it from a second attack, are not at least so liable to it as those who have had a fever of the ordinary kind; and, though he frequently made the enquiry, he never found a patient in whom this symptom was distinct who had suffered from the same fever on any former occasion." Dr. Perry† states as the result of an extensive series of observations his opinion, "that typhus generally is taken but once in a life-time, and that a second attack does not occur more frequently than of small-pox, and less frequently than of measles or scarlatina." Dr. Davidson states that of 609 patients in the Glasgow fever hospital only 74 stated that they had ever had fever previously. He justly observes that when we take into account the various diseases which are confounded with typhus, this small number can be easily accounted for.

But the protective power of the exanthemata has been much overrated. Three instances of second attacks of small-pox came to my knowledge in this county very recently. In two of them the patients had suffered the disease from inoculation very few years before. In one in which the inoculated disease was severe a most confluent eruption accompanied the second attack seven years after. Another instance has been related to me of a lady living in this country who has had the disease three times. Dr. Roupell refers to the case of one who had it seven times.

Instances of second attacks of measles are given by Dr. Baillie, who attended five children in May, and again in the following November, by Dr. Webster,‡ and by Rayer, who states that he met with three instances of second attacks of measles in the interval between the publication of the first and second editions of his work. The remarkable case of a second attack by Dr. Graves§ should, perhaps, be termed relapse into measles. The second eruption appeared twenty-one days after the commencement of the first illness, in which the eruption had been copious and severe.

Cases of second attack of scarlatina are stated by Roupell to be not at all uncommon. Several have fallen under my own observation.

V. The liability to relapse in cases of typhus has been urged as an objection to the classification by Harty and others. It might be replied that cases of measles, such as that of Dr. Graves just referred to, and cases of *reversio*, as it is termed by Rayer, after scarlatina, would tend to shew that the exanthemata are not exempt from relapse. But the true answer is that typhus is *peculiarly exempt* from relapse. Two kinds of cases are erroneously considered such: 1st. Relapses from typhus into fever symptomatic of a visceral irritation—generally gastro enterite.—"I am persuaded, says Cheyne,|| that obstinate and fatal

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\* Dublin Medical Transactions. Vol. 2.

† Dublin Med. Journal, Vol. 10, and Edin. Med. and Surg. Journal, Jan. 1836.

‡ Medico-Chirurgical Transactions. 2nd Series. Vol. 4.

§ Dublin Medical Journal, Nov. 1840.

|| Dublin Hospital Reports. Vol. 1.

relapses after typhoid fevers are often attributable to inflammation and, perhaps, ulceration of the villous coat of the intestines." And Broussais asserts that "when the frequency of pulse in 'convalescence' does not diminish, and the strength does not increase, it may be suspected that a form of latent inflammation exists. It may be discovered by permitting an excess which generally changes this frequency into a *real fever*, and develops the pain of the irritated part ;"\* but, 2ndly, cases of fevers not typhoid will under exposure to infection relapse into typhus. Dr. Davidson gives a tabular view of the relapses in the Glasgow Fever Hospital among 686 cases, in which no case of relapse from typhus into typhus occurred, but two of febricula and one of intestinal fever into typhus.

In 500 cases of fever admitted into the Navan Hospital in 1840, two cases only of relapse into typhus occurred, both were cases of febricula, which after a few days were sent to the convalescent ward, where they relapsed into maculated typhus, one in four days and the other in fourteen days after their removal thither.

VI. Lastly, the following extraordinary objection is put forward by Dr. West :—†

"The type of the fever itself varies, being sometimes intermittent, sometimes continued, changing from the one to the other form, and being occasionally converted into other diseases."

In other words there is no such disease as typhus!

To this the supporter of the speciality of typhus replies, that the disease is here, and in numerous quotations throughout the paper, confounded with other fevers; typhoid it may be in their nature, or becoming so in their progress, not arising from an animal infectious poison, but from a variety of sources, which contain a variety of poisons, the identity of *any one of which* with the *typhus* poison is a matter in dispute, and to be argued upon the conclusion of our investigation into these sources in the following chapter.

Meantime the pertinent remarks of Dr. Copland, upon this subject, are not unworthy the notice of those who rely for the means of drawing accurate distinctions upon such sources as Dr. West has explored :—"True or *contagious* typhus has been confounded with synchoid and nervous fevers on the one hand, and with putrid or malignant fevers on the other. It has been already stated that putridity or malignancy, not only may characterize a particular form of fever or certain epidemics even at an early period of their course, but, also, owing to various contingencies, may take place in advanced stages of any other fever. As the circumstances favouring the generation and spread of typhus are often such as also tend to develop those changes which have been usually named putrid or malignant, and as these changes are frequently observed in the latter stages of typhus—the symptoms distinguishing this fever becoming associated with, or followed by, those indicating the putro-adynamic state—so has it been often confounded with other fevers in which this state has predominated more or less. If we refer to the numerous histories of epidemic typhus, recorded by writers from the close of the 15th century up to the present time, we shall find that although many of these, owing to the concurrence of circumstances, developing a putrid or malignant disease, were instances of fever either identical with or very closely resembling that which I have described as such in the preceding section, yet many others, or even the majority, were true typhus, in which the putro-adynamic state was either early or predominantly developed. The exanthematous eruption, characteristic of typhus, being succeeded or accompanied by the petechiæ, indicating the approach of the septic condition, and being either

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\* Chronic Phlegmasiæ, Vol. 2, p. 53.

† On Exanthematous Typhus.

mistaken for them or for an eruption of miliaria. Owing to this circumstance, especially typhus, low, nervous, and putrid fevers, have been very generally confounded together."

The reader of the foregoing, and many other passages in Dr. Copland's admirable article on typhus, must be startled with the following passage in Dr. Roupell's recent work on the disease, when he finds that Dr. Copland is not like Peebles and others, who have described exanthematous typhus, passed over in silence, but is actually mentioned by name as belonging to the authors referred to.

"In the above description *typhus* is considered to belong to the continued fevers. It is looked upon by the most recent authors, in this and other countries, not as an individual disorder, but as one into which others may be and frequently are converted!" (page 5.)

Here for the present we leave the subject, since that portion of the argument for the classification of typhus with the exanthemata, which is derived from the differences between it and other continued fevers, will properly come under consideration when discussing the identity of typhus and typhoid fever.

#### CHAPTER II.—OF A FEVER POISON, GENERATED DURING THE DECOMPOSITION OF DEAD ORGANIC MATTERS.

The difficulties attending an examination into this part of the enquiry into the sources of fever are very great, and are confessed by all who are familiar with the conflicting statements advanced on the subject. Our difficulties are increased by the indeterminate character of much of the evidence offered in proof of the paludal origin of fever, some of which not only claims to prove the power of such sources to cause continued, but *infectious* fever—by the fact that much of this evidence is moreover inadequate, as it proves only the occurrence of fever in situations and among persons which might be considered equally obnoxious to contagion as to miasm, and by the silence, or mysterious, or contradictory language of those to whom we might look for assistance and direction in a scrutiny of the mass of conflicting testimony, from which our conclusions are to be drawn.

Thus, Dr. Christison says, "the great questions involved in the investigations into the causes of continued fever are three in number :—Does the disease originate in infection? Does it originate in other causes? Granting that it does originate in other causes, may such fevers propagate themselves by infection? It will be seen that they cannot be all answered by any means with equal confidence;" and, accordingly, while he is full and illustrative on the subject of contagion, he treats of other causes in a most cursory and unsatisfactory manner, and while he admits that "the general conclusion from the whole facts seems to be that a disease, undistinguishable from true infectious fever, may sometimes arise without infection," adds, "that on descending from the general question to the more special one—what the other cause or causes of fever may be?—the difficulties are greatly increased, indeed they become insurmountable, without such limited and vague facts as are at present possessed on the subject," and "it appears a needless waste of time and labour to attempt anything further on this head."

Nor are we more enlightened by Dr. Davidson, who, while he states that he is not prepared to assert that febrile affections may not, under peculiar circumstances (what he does not inform us), arise from paludal sources, effectually excludes them from consideration by putting forward the following conclusions under the head of "Alleged sources of continued fevers, *not* typhoid."

"From a consideration of the whole evidence that might be adduced respecting this point, it may be drawn as a conclusion, that although putrid

matters when injected into the veins of animals cause death under symptoms similar to those of typhus fever, yet that the effluvia arising from similar matters do not, under ordinary circumstances, produce any deleterious effects on man." Again—"Before concluding this part of the essay we shall notice an hypothesis, which has lately been somewhat confidently brought forward to account for the prevalence of typhus in some large cities, viz. : that a peculiar malaria is generated by the animal and vegetable filth, which accumulates along the sides of rivers running through large towns, and that the inhabitants who live in their immediate vicinity become thereby subject to fever. We are quite aware that very disagreeable and sometimes fætid effluvia occasionally arise from such situations, particularly during hot weather, but that it is capable of causing continued fever has not even been rendered probable by any satisfactory evidence."

We have it stated upon high authority that gaseous contagions contain organic matter in a state of decomposition or progressive change. We have it also announced that from certain decomposing animal and vegetable substances, organic matter in a state of "progress to decay" is evolved, which, when collected and retained in a manner similar to the former, completes the stage of decomposition, or, in other words, "putrefies."

By evidence of the most unexceptionable kind the former of these is proved to be capable of communicating the *state of change*, of which it is the subject, to the healthy human organism.

We have to enquire whether the analogy of *action* of these bodies is as perfect as the analogy of *condition* appears to be, and, whether, "when the process of respiration is modified by contact with a matter in the progress to decay, when this matter communicates the decomposition, of which it is the subject, to the blood—disease is produced."

We shall first state the analogy of condition of the *tangible poison*, evolved from decomposing organic substances, in the words of Dr. Southwood Smith—not only because it is clearly stated by him (so far as relates to its tangible existence), but, also, because this passage has furnished the text for some of the objections which we shall have to consider\* :—"It is known to every one that the putrefaction of vegetable and animal matter produces a poison, which is capable of exerting an injurious action on the human body. But the extent to which this poison is generated, the conditions favourable to its production, and the range of its noxious agency, are not sufficiently understood and appreciated. It is a matter of experience, that during the decomposition of dead organic substances—whether vegetable or animal—aided by heat and moisture, and other peculiarities of climate, a poison is generated, which, when in a state of high concentration, is capable of producing instantaneous death by a single inspiration of air in which it is diffused. Experience also shews that this poison even when it is largely diluted by an admixture with atmospheric air, and when, consequently, it is unable to prove thus suddenly fatal, is still the fruitful source of sickness and mortality—partly in proportion to its intensity, and partly in proportion to the length of time, and the constancy with which the body remains exposed to it, &c.

"But this poison was too subtle to be reduced to a tangible form. Even its existence was ascertainable only by its mortal influence on the human body ; and although the induction commonly made as to its origin, namely, that it is the product of putrefying vegetable and animal matter, appeared inevitable, seeing that its virulence is always in proportion to the quantity of vegetable and animal matters present, and to the perfect combination of the circumstances favourable to their decomposition, still the opinion could only be regarded as an inference.

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\* Poor-law Commissioners' Fourth Report, page 130.

But modern science has recently succeeded in making a most important step in the elucidation of this subject. It has now been demonstrated by direct experiment, that in certain situations, in which the air is loaded with poisonous exhalations, the poisonous matter consists of vegetable and animal substances in a high state of putrescency. If a quantity of air in which such exhalations are present be collected, the vapour may be condensed by cold and other agents, a residuum is obtained, which, on examination, is found to be composed of vegetable or animal matter in a high state of putrefaction. This matter constitutes a deadly poison. A minute quantity of this poison applied to an animal, previously in sound health, destroys life with the most intense symptoms of malignant fever. If, for example, 10 or 12 drops of a fluid, containing this highly putrid matter, be injected into the jugular vein of a dog, the animal is seized with acute fever, the action of the heart is inordinately excited, the respiration becomes accelerated, the heat increased, the prostration of strength extreme, the muscular power so exhausted that the animal lies on the ground wholly unable to stir or to make the slightest effort, and after a short time it is actually seized with the black vomit, identical in the nature of the matter evacuated with that which is thrown up by a person labouring under yellow fever. By varying the intensity and the dose of the poison thus obtained it is possible to produce fever of almost any type, endowed with almost any degree of mortal power."

In this last sentence we recognise the echo of Majendie's questionable assertions; the preceding statements are confirmed by the account of experiments upon "*le mauvais air*," given by Devergie:—"The gas, which is disengaged from putrefying animal matters, extracts with it a particular odour, infectious '*infecte*,' characterized by the general term putrid odour. We attribute this odour to miasma, that is to say to a cause void of meaning, because we are ignorant of the nature of the object which it represents.

Guntz has endeavoured to enlighten the phenomenon by the following experiment: he placed a bell glass over a portion of a putrefying dead body, in such a manner as to permit the air to penetrate, he submitted the apparatus to a temperature of 26° Cent. (equivalent to about 78° Far.) and, after a period sufficiently prolonged, he suddenly cooled the bell glass; immediately the product of the vapour assembled itself into drops, which evolved a strong odour of miasma, he treated these drops with chlorine, when the odour disappeared. He was thus led to suppose that the gas in escaping from the putrefying animal matter carried with it the vapour of water combined with a certain quantity of animal matter, very minutely divided, and this constitutes what has been named miasma.

This is not the only experiment calculated to lead to this opinion—others have been made with respect to vegetable matters. Moscati entertained the first idea of condensing the water dissolved in the atmosphere, for the purpose of detecting the principle which occasioned "*le mauvais air*." He suspended at some distance from the soil mattresses full of ice; the water which became deposited upon their surfaces condensed itself readily, when limpid it presented many small flakes which possessed all the essential properties of *animalized matter*. After a few days they putrefied completely. In the course of the year 1812, M. Rigaud undertook, in the marshes of Languedoc, a series of essays directed to the same end. He condensed dew on glasses, and the water which he obtained by this means presented all the phenomena obtained by Moscati.

In 1819 M. Boussingault observed that *sulphuric acid* placed in the proximity of a well, in which he had caused animal matter to putrefy, *blackened* very rapidly. He repeated this experiment in many infectious places, and found con-

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\* *Medicine Legale*. Tom. 1, p. 100. I am indebted to my friend Dr. Aldridge for referring me to this account of experiments on the subject.

stantly that the coloration of the acid was more prompt according as the air was more infectious," &c.

The inference naturally deduced from such experiments as the foregoing, taken in conjunction with the fact of the occurrence of fever in situations where these putrid exhalations have been found to exist—namely, that they contain a *fever poison*—has been met by numerous objections. The principal seem to be the following:—1. That a mephitic poison is confounded with the fever poison. 2. It is denied that these sources ever generate fever, because the number of cases does not bear a sufficient proportion to the number of instances of exposure, and because they generate several diseases differing in their nature from fever, and it would amount to a confounding of fever with these,\* if we attributed its origin to the same poison. 3. It has been objected to the evidence of the frequent occurrence of fever from this source—that it is furnished from the experience of persons who deny the infectiousness of fever, and is, therefore, suspicious; † that in the recorded cases malaria and contagion have been confounded; that it amounts only to a proof of the frequent coincidence of fever and the effluvia from filth, and does not prove that the former stands to the latter in the relation of an effect to a cause; that, granting continued fever is ever thus produced, it is not contagious or typhus fever, &c.

1. It has been said‡—"If the statements of Dr. Smith were put into the simple form of the only proposition which they really contain, they would amount merely to this—that exhalations from certain putrescent matters have the power of producing both asphyxia and continued or typhus fever; the former of which is a result familiar to all, and the latter, a mere assertion, deriving a little hue of probability from its juxta position to a known truth. There is a wide difference between the asphyxia, which is caused by mephitic gases, and typhus fever,—a difference which can never be explained, as Dr. Smith attempts to do, by a reference to the diversity in the doses of the poison. We presume that if a few doses of the poison, in its less potent shape, were sufficient to create typhus fever, *a fortiori*, such a quantity of it in a more concentrated form, as would be capable of producing a state of asphyxia not ultimately fatal, would commonly at least leave the sufferer for days or weeks in the toils of a highly dangerous fever, yet the reverse is the case, as the histories of mephitism amply demonstrate."

So they doubtless do, and they, moreover, shew that in some cases of recovery from mephitism, a disease, apparently the effect of a morbid poison, followed, though *not* fever.

But this writer has, like Dr. Smith, confounded the action of two poisons of different kinds—an inorganic poison, sulphuretted hydrogen, and a morbid poison, whose action depends not upon its chemical qualities, but upon the existing condition of its particles, they being at the time of their evolution in a state of decomposition or transposition.

The advocate for the malarial origin of fever does not regard the fever poison as the product of *extreme putrefaction*, capable of causing mephitism or fever, according to the dose in which it is applied. But he holds that during the *progress* to decay of organic substances, matter in a state of decomposition is

\* "Dr. Smith illustrates and supports his doctrine of the malarial origin of fever by referring to facts which relate merely to periodic fevers; and he maintains the identity of the 'fever poison' of this country with the poison of plague; wherefore, on the principle, that things that are equal to the same thing are equal to one another—plague and ague are generated by the same poison!"—*Forbes's Review*, No. 21, p. 13.

† Vide Dr. Christison's article—Fever. Library of Medicine.

‡ Forbes's Review, ut supra.

evolved which is capable of communicating its state to the organism with which it may be brought into contact, while, on the completion of the process of decomposition, the morbid poison ceases to be evolved and the mephitic poison is generated.

A perfect analogy to this is found in the effects of decayed sausages, which, according to Christison, "are poisonous only at a particular stage of decay, and cease to be so when putrefaction has advanced so far that sulphuretted hydrogen (the mephitic gas) is evolved." True, in mixed sources, and those which are receiving daily additions of new matters, the morbid poison may co-exist with the mephitic poison, and the latter may occasionally, by its sedative effects upon the nervous system, assist the operation of the former; but they are essentially different in their nature and action.

The second objection—"an alleged want of proof that the fever poison is ever generated in such sources"—rests, 1st, upon the relatively small number of cases of fever so produced, compared with the activity of contagion; and, 2ndly, upon the fact that several diseases of different kinds, from *tic-doloureux* up to plague, are attributed to miasmatic effluvia. Can we (it is asked) believe that they are all owing to the same poison?

The first of these grounds is urged against decomposing animal matters; the second chiefly against mixed sources, as sewers, banks of rivers, &c.

It is true that very few observations exist which can be said to prove the occurrence of fever from exposure to animal putrefaction—still, some such cases have occurred. The following is referred to by Dr. Christison as an unexceptionable one:—

\*"An American merchant-ship was lying at anchor in Wampoah road, sixteen miles from Canton. One of her crew died of dysentery. He was taken on shore to be buried; no disease of any kind had occurred in the ship from her departure from America till her arrival in the river Tigris. Four men accompanied the corpse and two of them began to dig a grave. Unfortunately they lit upon a spot where a human body had been buried about two or three months previously, as was afterwards ascertained,—the instant the spade went through the lid of the coffin a most dreadful effluvia issued forth and the two men fell down nearly lifeless: it was with the greatest difficulty their companions could approach near enough to drag them from the spot and fill up the place with earth. The two men now recovered a little, and, with assistance, reached the boat and returned on board. . . . One of these men died on the evening of the fourth day, and the other on the morning of the fifth, after symptoms of malignant petechial fever (the petechiæ occurring on the fourth day).

"In eight days after the opening of the grave one of those who were not engaged in the work was attacked with the same symptoms as his companions, and the fourth had a slight indisposition of no very decided character."

It is to be remarked, that in the above case two circumstances were present which we shall see have not always existed in the negative instances, brought forward to prove that this is not a source of fever; namely, "*confinement* of the effluvia," and a *not very advanced* stage of putrefaction. Ferriar, who did not consider the exhalations from putrid animal matters a source of fever, says—† "It appears from some late observations made on altering the vaults of a church in France, that the *confined effluvia* of putrid bodies produce fever when brought into action. Perhaps this is the solution of the question." ‡ "Fourcroy states, that the grave-diggers informed him that the putrid process disengages

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\* Medico-Chirurgical Review, for Jan. 1825, p. 203. Dr. Christison also refers to the Mem. de la Soc. Royale de Med. 1. 97.

† Medical Histories, vol. 1. On New Contagions.

‡ Walker's gatherings from Grave-yards, p. 124.



elastic fluid, which inflates the abdomen and at last bursts it; that this event instantly causes vertigo, faintness and nausea in such persons as, unfortunately, are within a certain distance of the spot where it happens, &c." In the exhumations, conducted on such a large scale at the cemetery of the Innocents, and quoted by Bancroft and others in proof of his position, neither of these conditions could have existed, since no interments had been allowed for six years previously.

In many of the cases also related by Mr. Walker it is mentioned that the bodies had been buried for years, or were in an advanced stage of putrefaction; under these circumstances mephitism was produced—but not fever.

The other part of this objection, namely that so many different diseases are ascribed to this source—can they all be the effect of the same poison? can only be answered by supposing a variety of morbid poisons to be formed together or consecutively in the same source. Several considerations render it probable that this is the case in some malarial sources.

1. The progressive nature of the changes which the decomposing body undergoes, and the different circumstances under which the same organic matters (undergoing decomposition) may be placed in different places, or at different times. There is nothing improbable in the supposition, that the same source may at one time give origin to the poison of ague, and at another to the poison of fever.

2. The fact that an individual exposed to these sources will frequently become affected with two diseases. These will usually follow one another at a short interval. "In the vast horde of cases," says Dr. Addison,\* "which the river side is continually sending forth, synochus and typhus are of frequent occurrence, and these are frequently followed, when the patient is convalescent, by well-defined agues." Sir H. Marsh has noticed the same occurrence in the epidemic of 1826, in Dublin, and it is well known that after this epidemic the hospitals of that city were filled with cases of ague. This is perfectly analogous to what happens from exposure to two morbid poisons, the one which has the shortest latent period takes precedence and is followed by the other, as in the case related by Dr. Williams of a boy who was inoculated at the same time with the virus of measles and cow-pock. The cow-pock first ran its course, and was then followed by measles. In the same way it is very possible that the poison of ague, imbibed at an early part of the year, may lie latent until the conclusion of a continued fever received many weeks later.

3. This power of generating different diseases, is alleged of those sources in particular which contain a *variety* of organic matters, and which are in a state of constant change from the superaddition of new materials or from atmospheric changes—such are sewers, the banks of rivers, &c.,—and it is to these that the great body of evidence, as to the frequent production of fever, applies, and not to the regular, uniform, and spontaneous decomposition of any single portion of animal matter, however great its bulk.†

\* On Malaria. London Medical Gazette,—vol. 3, new series.

† If the subject admitted of an explanation purely hypothetical we might draw an analogy, not destitute of plausibility, between the action of human contagion and putrefaction in this particular; and we might suppose, that as in fever generated spontaneously in the human body, there does not seem to exist any power of communication by infection, so in dead animal matter the product of any single mass of spontaneous putrefaction is not a fever poison, but that this is generated by the exposure of *fresh* dead organic matter to the contagion of the former. For this hypothesis to be consistent with the facts, the following should be the various consequences of exposure to putrefactive decomposition:—

SECT. II.—In order to obviate the objections urged against the evidence of the frequent occurrence of fever from malarial sources,—namely, that it has been confounded with contagion, and that, at all events, the evidence proves, no more than the frequent co-existence of filth, fever, and poverty.

We shall select only a few cases which have occurred under circumstances unfavourable to the supposition of such a cause as contagion, and the histories of which present contrasts to that of contagious fever in some of the following particulars.

I. The class of persons affected, not those usually obnoxious to contagious fever unless under circumstances of prolonged exposure.

II. Occurring without the presence of any of the aids to contagion and at an opposite season of the year.

III. In localities in which contagious fever does not prevail.

IV. Spreading in spite of the preventive measures, which are found to check the diffusion of contagious fever.

"In great towns," says Christison, "cases are met with during the intervals between epidemics, and in a station of life where epidemic fever in epidemic seasons of the worst kind is seldom witnessed. A fever of this description, tedious in its course, characterized by much nervous and muscular depression, without any particular local disturbance, and, especially, without the marked disorder of the functions of the brain which distinguishes most cases of epidemic typhus and synochus, was so prevalent among the better ranks in certain streets of Edinburgh some years ago, at a time when fever was not prevalent among the working classes, that a general impression arose among professional people of the existence of some unusual local miasma. A great variety of parallel facts might be referred to—all leading to the general conclusion, that a disease if not identical with, at all events closely resembling, synochus and typhus as described above, may arise without the possibility of tracing it to communication with the sick. A statement of this kind acquires great weight in the instance of such a visitation of disease as that just alluded to, which prevailed among people in easy circumstances in a great town."

Very similar is the testimony of Dr. Cheyne:—"For several years the fever appeared in families only in solitary instances, or if more than one were affected they were seized nearly at the same time, but it did not extend so as to lead us to think that it propagated itself. We were unable to assign the cause of the disease further than that we observed in several houses, in which our patients lay, that fætor which is discoverable when a sewer is choked, and, in some instances, upon enquiry it was found that the sewer leading from the house had been improperly constructed and neglected."

A similar instance of fever, apparently caused by defective sewerage, came under my observation recently in the house of a gentleman of fortune in this county. For a long time an unpleasant odour had been remarked in several parts of the mansion, more especially near this gentleman's study and in the

1. From exposure to a single mass of animal matter undergoing spontaneous putrefaction—no fever.

2. From exposure to the emanations from substances added to the former disease, varying in intensity in proportion as circumstances were more or less favourable to rapid communication of the "contagion of decay" from decomposing to recent organic matter.

3. From successive exposure of a number of individuals to successive additions of organic matter, (under above circumstances), a number of cases of disease.

men servants' sleeping apartment. The poisonous effects of the malaria were first produced in the form of obstinate dysentery in one of the female servants. Then the owner of the mansion was attacked with what he at first supposed was mere biliary derangement, but which rapidly assumed all the characters of severe gastric fever, becoming attended toward the close with purple petechiæ and terminating fatally on the 11th day.

About the same time two men servants were seized with symptoms of fever. In one it was cut short and in the other it ran its course, ending favourably about the 11th day. Two other persons who came to the house on business (from the neighbourhood) and who remained in it for a few hours, were seized with the same fever, which ran through its course at their own houses but without extending to other individuals.

After this lamented occurrence the cause of the effluvium was searched for and found to be a leakage of the soil pipe of one of the water-closets, which had allowed the filth to percolate through the wall and exhale into the atmosphere of the house. This exhalation was also much favoured by the warm temperature kept up in the house by heated flues.

About the months of October and November, 1839, I was repeatedly consulted by the inmates of a large establishment in the neighbourhood of Navan, on account of different forms of gastro-enteric affection, especially diarrhœa and dysentery. So many instances occurred at intervals, (in some cases of weeks), and the general resemblance was so great, that I thought they must arise from some local cause, and I expressed a strong suspicion that some source of malaria existed in the house or immediate vicinity. The house itself was large, airy, and commodious, so that our inspection was directed rather to the immediate neighbourhood, and it was thought that the cause had been discovered in an old sewer which had been laid open in the course of some building operations. The closing of this was not, however, attended with the effect of stopping the endemic affection, though it gradually ceased after about a dozen people had been attacked. The following spring was remarkably dry, scarcely any rain having fallen for about six weeks; toward the close of this period an effluvium of a very disagreeable nature became perceptible in some parts of the house, and at the same time—within a day of each other—two of the inmates were attacked with exquisitely marked typhus, attended with profuse measy eruption, and in one of the patients with violent delirium. Every circumstance rendered the existence of contagion in either case highly improbable, I might almost say impossible, and on my again expressing my strong conviction that some form of malaria was the cause of the fever, I was informed of the effluvium perceived in some of the passages, and also of the fact that in the original construction of the water-closets they had been made to depend for their supply of water upon a cistern of rain water, which, of course, had been for weeks empty during the present spring and preceding autumn. These cases did not spread, and all traces of indisposition were removed by making the required alterations for ensuring a constant supply of water.

In the month of October, 1839, I attended a respectable man who resided in a large and airy mansion, as "care taker," during the absence of the family upon the Continent. His illness had come on slowly and insidiously, but, when I saw him, had all the characters of bad remittent fever, attended with much abdominal congestion. This it was attempted to relieve by leeches, &c., but it increased and led afterwards to large evacuations of blood from the bowels. He recovered slowly and with difficulty. At the time I saw him he was lying in the basement story of the house.

A few weeks after the return home of the family, the *butler* was attacked with symptoms of gastro-enterite and slight jaundice. He recovered partially in a few days, but in the course of a week after was suddenly seized with complete loss of muscular power, paleness and coldness of the surface, sickness of

stomach, &c., followed by vomiting of a dark olive fluid, and in two days by large evacuations of tarry blood from the bowels, hiccup, subsultus, &c., while the skin was covered with vibices and black petechiæ—some of them of the size of large shot. The fever which followed had no perceptible remissions and perfectly accorded with the descriptions of putrid malignant fever by Huxham and others. The striking resemblance of some of the symptoms of this case to that which had occurred in the same place more than a year before, led me to attribute both to a common cause and to enquire for the source of the malaria. The following were the facts ascertained:—In a room in the basement story, occupied by the last patient and in which he had latterly sometimes slept, was a sink emptying into a pipe, which communicated at the distance of about ten feet with the main sewer of the house—into which the contents of two water-closets passed. This sewer was very large at its termination and when the wind blew from that direction towards the house, there being no smell trap under the sink, the effluvia of the sewer was carried up into this room and became so insupportable that the patient used to stuff the aperture with a piece of rag when retiring to bed. Upon enquiry I was informed that the first patient had frequently before his illness remarked the same fætid effluvia. It is worthy of remark that the sewer had *not* been cleaned in the interval between the two cases.

The following case, very similar to the last in its nature and origin, I give upon the *suspicious* authority of an anticontagionist\*:—"I attended," says Dr. Armstrong, † "a very respectable tradesman, labouring under a remarkable bad attack of typhus fever. It was such a case as would have been called plague in the time of Sydenham. He had knotted glands and carbuncles, and black petechiæ. He was one of four or five individuals who had transacted some business in a nobleman's kitchen; a filthy fluid had overflowed that kitchen; he was sickened at the time, and in common with *all* the others had an attack of typhus fever."

If we looked about for a large town less liable to contagious fever than others we might probably find it in Birmingham,—yet here endemial causes of the kind, which Dr. Davidson has pronounced inadequate to this effect, have produced fever. A good instance for illustration is found in Dr. Ward's account of an endemic fever, which prevailed in certain localities in Birmingham in the *summer* of 1837.

‡ "The river Rea, that separates Birmingham from its suburb Badesley and serves as a cloaca maxima to both, carries its filthy stream onward, partly to turn a mill and partly to fill a mill pond. During the drought which prevailed last year the water was very low in the main stream and mill pond, and the mills not being regularly worked became quite stagnant and offensive. The back stream also became dry and shewed its mud banks, that were only occasionally wetted by a flush of the washings of the town after a shower, or by the small surplus accumulated during the cessation of the working of the mills. The exhalations from the half dried mud and putrid water were so disagreeable at night as to nauseate the more delicate inhabitants of the adjoining streets, and soon produce disease in the form of typhoid fever of an infectious (?) character." He goes on to state that about 50 cases—some fatal—occurred in the immediate vicinity of the stream, and "still lower down the stream, where the water was as black as ink, there were 13 pauper cases in one yard, and many others, both pauper and private, along the same line." That this fever was owing to the state of the stream is proved by the disease being confined to the locality, the small number affected in so large a population as Birmingham, the season of the year, and the exemption of this town from the causes which aid contagion—these are well-summed up by Dr. Ward.

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\* See Christison, *ut supra*.

† Lectures by Rix.

‡ Provincial Medical Transactions, vol. 6.

"There is a difference of nearly 200 feet in the elevation of different parts of the town. The streets and the courts or yards in which the mechanics live are wide and airy in general; fuel is cheaper than in any other large town in England; the water is excellent—and till within the last year there has been but little distress."

We have already adduced the effects of seclusion of the sick in proof of the infectiousness of typhus. In the fever arising from endemial sources this measure has no such influence. I was much struck with this fact when making some investigations as to the source of a fever, which prevailed in the summer of 1839 in a hamlet attached to a flax manufactory near this town, from which a considerable number of cases had been sent to hospital in the months of April, May, and June. The object of an examination which I made of the place was to obtain satisfactory instances of contagion, but I soon found that no such evidence was to be procured. For the intervals between the illness of different members of the families were too irregular to admit of communication from one to another. Thus, in one house the first case sickened on the 2nd of April, and the second on the 5th. In another, more than three months intervened between the first and second cases. And in several families in which the first case had been early removed to hospital, the second had sickened before the patient's return. Besides,\*there was too much cleanliness and comfort: several of the houses had been repeatedly white-washed during the time that the fever was going through the family, and the inmates were all well off—being employed in the neighbouring factory.

Several things convinced me that this fever had a malarial origin. The hamlet was built in the form of two parallel streets, terminating in a large open space, in front of which were twelve houses looking North East. This space had no drainage and was full of shallow pools of black putrescent water, into which the inmates daily threw cabbage leaves, &c. to rot for manure. In this country the East and North East winds prevail for the first three months of summer—April to June—and in consequence the inhabitants of the twelve houses described were peculiarly obnoxious to the emanations from these pools. The weather had during the summer been unusually dry and favourable to such emanations. Accordingly I found that while only seven cases of fever had occurred in twenty-two houses, forming the longer of the two streets, 30 out of 50 (the entire number) had occurred in these twelve houses.

The proof was to my mind rendered complete by the immediate effect of the heavy rains which set in in July. The disease was stopped at once and I have not heard of a case of fever in the same place since.

Similar proof, derived from the sanatory effect of the removal of the assigned cause, was afforded me in the case of a house in this county from which three servants were sent into the Navan hospital at short intervals labouring under continued fever, one of whom was also admitted a second time with severe dysentery. A very offensive smell had been long noticed in the yard adjoining the kitchen, and after the occurrence of these cases the sewer leading from the kitchen was in consequence examined, and found to be completely obstructed by a quantity of black putrescent matter. Upon the removal of this the smell of course disappeared and no return of indisposition has since occurred, either among the servants or family. There was not the slightest evidence of contagion in any of these cases.

A reason for attributing the fever to the operation of endemial causes might be found in some instances, in the fact of the great indisposition of the disease to spread in the house in which a case occurs, even though the circumstances favourable to contagion may be present. Such an instance is given by Dr. Ferguson which we shall have again to notice.

In a paper on the statistics of fever, in Belfast, Dr. Mateer states that "one street, Carricks Hill, and its continuation, Mill-field, with the adjoining lanes

and entries, are found to have furnished three fifths of the whole amount of cases, and yet they are by no means the poorest or worst ventilated parts of the town." He attributes the prevalence of fever in this locality to the great want of water—"the consequences of which are want of cleanliness and bad sewerage, so that decayed animal and vegetable matter of all kinds, not being carried off by a current of water in the usual way, accumulate and generate miasmata."\* This observation is of the more value that Dr. Mateer adduces it in support of the action of infection. Upon which an acute reviewer remarks:—"Surely this offers the very strongest argument against Dr. Mateer's own view of the extensive operation of contagion; why should this be all powerful in one particular locality? why should it not do its worst where poverty and bad ventilation flourish? why, but that on the large scale other causes of fever are far more potent than contagion."†

Lastly, the following case by Dr. Currie illustrates this form of fever in several particulars:—

"The 30th Regiment, as is usual with troops in Liverpool, was billeted in the town but paraded and mounted guard in the fort, situated north of the town and on the banks of the river. The general guard room had been used, previous to the arrival of the 30th, as a place of confinement for deserters; it was extremely close and dirty, and under it was a cellar, which in the winter had been full of water. *This water was now half evaporated and from the surface issued offensive exhalations.*

In a dark, narrow, and unventilated cell off the guard room it was usual to confine such men as were sent to the guard for misbehaviour, and about the beginning of June, 1792, several men had been shut up in this place on account of drunkenness, and suffered to remain there twenty-four hours under the debility that succeeds intoxication. The typhus or jail fever made its appearance in two of these men about the first of the month and spread with great rapidity. Ten of the soldiers labouring under this epidemic were received into the Liverpool Infirmary. . . . . The symptoms of the fever were very uniform, in every case there was more or less cough with mucous expectoration; in all those who had sustained the disease eight days and upwards there were petechiæ on the skin, in several there were occasional bleedings from the nose and streaks of blood in the expectoration. The debility was considerable from the first. . . . . Great pain in the head with stupor pervaded the whole, and in several instances there occurred a considerable degree of low delirium. . . . . Our next care was to stop the progress of the infection; with this view the guard house was at first attempted to be purified by washing and ventilation; the greatest part of its furniture having been burnt or thrown into the sea. All our precautions and exertions of this kind were, however, found to be ineffectual. The weather was at this time wet, and extremely cold for the season; the men on guard could not be prevailed on to remain in the open air and from passing the night in the infected guard room, several of the privates of the successive reliefs on the 10th, 11th, and 12th of the month, caught the infection. . . . . No means having been found effectual for the purification of the guard room it was shut up, and a temporary shed erected in its stead. Still the contagion proceeded on the morning of the 13th, three more having been added to the list of the infected. On that day, therefore, the whole regiment was drawn up at my request, and the men examined in their ranks: seventeen were found with symptoms of fever upon them. It was not difficult to distinguish them as they stood by their fellows. Their countenances were languid, their whole appearance dejected, and the ad-mata of their eyes had a dull red suffusion. These men were carefully sepa-

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\* Dublin Medical Journal, September, 1836.

† Medico-Chirurgical Review, Oct. 1836.

rated from the rest of the corps and immediately subjected to the cold affusion. . . . These means were successful in arresting the epidemic—after the 13th of June no person was attacked by it.”

It may seem presumptuous to offer an opinion differing from that expressed by the distinguished writer under whose observation these cases occurred, but we think there is every reason to question the existence of infection, and to regard them as of purely endemial origin. Let us consider them with reference to the circumstances unfavourable to the existence of contagion before enumerated.

1. *The class of persons affected.* British soldiers in time of peace are not obnoxious to contagious fever. The fact is stated by Dr. Cheyne, that while fever of this kind prevailed in the street contiguous to the principal barrack in Dublin, in 1817, and among a class of persons with whom the soldiers commonly associate, they escaped, because “little under the influence of the predisposing causes of fever; for the pay of the soldier is ample, he is well clothed, well fed, well lodged, and well looked after, and all his wants in health as well as in sickness are provided for.”\*

2. *The season of its occurrence* is another strong reason for considering this fever of an endemial kind. A contagious epidemic may live out the summer, but unless it is imported we should doubt its being generated at that season.

3. *The locality* was also unfavourable. Isolated as it was, an imported contagion was unlikely.

4. *The inefficacy of all the preventive measures*, short of removal from the locality, with the immediate cessation of the disease which followed this step, are strongly opposed to the idea of infection. In fact if it be admitted that the stage of maturation or crisis is the period of infection, an examination of the dates of these cases will shew that in no one was the disease so far advanced as to have enabled the patient to communicate it to his comrades, supposing them (which is not at all probable) to have had access to the hospital. On the other hand the positive evidence in favour of malaria is clear and decisive. Several individuals were exposed to this source during the debility which succeeds intoxication, and slept in its immediate neighbourhood. They were attacked, and others in succession as they became exposed to the same source. The malarious spot is abandoned on the 12th, and no case is observed after the 13th. Hereafter we shall attempt to shew that the symptoms of these cases were such as characterise not typhus but typhoid fever—especially the late appearance of petechiæ, the exudations of blood from the air-passages, and the form of disturbance of the sensorial functions.

The above are a few of the instances which might be brought forward to prove the occurrence of fever in situations and circumstances unfavourable to contagion, and not liable to the objection that *filth* has existed merely in fortuitous connexion with *fever and poverty*. It would not be difficult to draw from the published histories of infectious fever (so called) such a number of similar facts, as would render doubtful the justice of Christison’s objection, that “as for the few instances remaining, where true primary fever appears to originate in one of the above causes, all that need be said farther is that for one instance where such fever follows such cause, a thousand instances occur where no effect of the kind ensues, and that, consequently, some more essential influence is probably brought into play, than what appears merely on the surface of the investigation.” But some argue that the disease produced is not fever—for, first, it does not diffuse itself as fever does by infection. This is not the place to enter upon an examination of the conflicting statements upon this question—we shall do so hereafter; but admitting that it has been asserted too hastily by Dr. S. Smith, and others, that *infectious fever* is generated by paludal sources, we

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\* Dublin Hospital Reports. Vol. 2.

deny that this justifies the inference sought to be deduced, that, therefore, *continued fever* is not so generated. On the contrary, it seems more consonant with reason to infer, that if fever affects a number of individuals in a certain locality without appearing to be communicated from one individual to another, and without, in any instance, being carried from that locality, this fever must arise from some local source common to all the affected persons. And if that party are in extreme, who hold that fever of a contagious specific character is daily generated by common causes external to the human body, equally so are the opposite party who deny to these sources the power to cause fever, "not typhoid," while at the same time they are ready to admit the identity of their own "specific contagion" with a disease which, the most eminent observers maintain, is never contagious! It is surely more consistent with the doctrine of the specificity of typhus to let it stand alone, and to give a place to non-contagious continued fever, than to exclude the latter by a doubtful assimilation of typhus and typhoid fevers. Hereafter we shall attempt to shew that the most recent science is in accordance with the practical observation of Grant, that "these fevers, 'typhus,' are generally contagious which the common fevers are not, unless their nature is altered, and they are rendered malignant by bad treatment"—while we may see reason in the present state of society in our large cities, in the widely prevailing influence of crowding, poverty, non-ventilation, &c., and the consequently frequent and facile transition of common into contagious fever, why the most opposite conclusions are formed as to their origin and diffusion, and why it happens, as Christison truly remarks, that "the greater proportion of the discrepant doctrines of the present day as to the origin of fever are founded essentially upon the same great body of facts."

Again, by some it is urged that the disease produced by paludal emanations differs from continued fever in symptoms and in type. Thus Dr. Christison alleges that "few inquirers have taken sufficient pains to distinguish primary continued fever from irritative gastric fever." This objection cannot be allowed to have much weight so long as the *primary* nature of typhoid fever is a matter of dispute. Upon the subject of the type Dr. Christison may be quoted against his party, for if, as he asserts, "The coast remittent fever of Africa and other tropical countries seems to differ little in its characters from synochus, with a rapid and early stage of typhoid depression,"\* what becomes of the argument against the malarial origin of continued fevers from alleged differences in the nature of these and the intermittent and remittent fevers, also produced by malaria? Besides how can the exclusive contagionist answer the anti-contagionist who rests his doctrine on such facts as those adduced by Armstrong: "Shortly after I had published my 3rd edition on typhus fever, in which I had strenuously maintained the doctrine of human contagion, I met with a case of intermittent fever; in a few days the fever became remittent, and in a few days more put on the continued character, and the patient died with all the most malignant symptoms?"† or how will he dispose of the assertion of Dr. Elliotson, that most cases of so called typhus fever are really remittent, ‡ or explain

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\* Library of Medicine.

† Lectures by Rix.

‡ Lectures by Rogers. Dr. Mateer also observes—"We have the paroxysms of which fever is made up best seen in the intermittent and remittent fevers, but still by careful observation we can detect something of the same kind, though masked and often difficult to recognize, in the continued fevers of this country. These almost always assume more or less of the remittent character."—*Dublin Journal, ut supra.*

Dr. Currie remarks, whoever has watched the progress of fever must have observed the justness of the observations made by Cullen, Vogel, DeHaen, and others, that even those genera which are denominated continued are not strictly



the occurrence (already noticed) described by Marsh and Addison of well-defined ague, following on the subsidence of continued typhus or synochus? Was the ague also the effect of contagion? Or will the contagionist escape from the necessity of adopting so easy a solution of the difficulty as the supposition of different morbid poisons, generated at different periods in the same locality by a simple denial of the fact, and an impeachment of the accuracy of the observers who have recorded it? "In Sydenham's time," says Dr. Hancock, "and even in that of Fothergill, the quotidian of spring became continued fever in summer, while the simple continued fever of summer often changed to a malignant type in autumn. These were simple observations at a time when systematic arrangements had not put physicians in trammels. But now lest we should be guilty of medical heresy we must not insinuate that ague can change into continued fever, and non-contagious fever into contagious typhus, either in an individual case or in the course of the year."

### SECT. III.—*Varieties of the Sources and Modes of Application of the Poison.*

The organic matter constituting the source of the morbid poison may be purely animal, vegetable, or a mixture of both.

It must be admitted that fever seems to be very rarely produced by exposure to purely animal exhalations, and the facts brought forward by Bancroft, Chisholm, Duchatelet, and others, shew that in the great majority of cases this exposure has been continued for any length of time with perfect impunity, but still there have occurred well authenticated instances to the contrary, some of which have been referred to; and a fact lately published, by M. Devergie, deserves farther notice. It is the occurrence of hospital gangrene in the hospital of St. Louis, which he attributes to the emanations from Montfauçon, since the disease was confined to the wards which were exposed to those emanations, and did not appear in other parts of the building.

Now if we admit the inference which seems naturally to follow from such instances as those related by Pringle, Hennen, &c., of the occurrence of typhus in the unwounded in wards, in which hospital gangrene existed, and of typhus attacking the attendants employed in washing the bandages of the same—namely, that hospital gangrene is a modification, or as it has been expressed, "a visible personification" of the typhus poison; we cannot avoid the admission that a fever poison may be generated by decomposing animal matter under certain conditions.

What the conditions required for this result may be, and why it so seldom happens that fever is thus produced, are questions to be resolved by deeper and more accurate investigations than appear yet to have been made.

There seems to be a more general belief in the activity of the vegetable poison, though why it might be difficult to say, unless from juxta-position with the known fact of their power to cause periodic fevers, since there is at least an equal paucity of strict evidence with regard to this as to the animal source. About 15 years since I witnessed the origin of a highly typhoid petechial fever in a healthy village in England, which appeared to arise from a vegetable source

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such, but have pretty regular and distinct exacerbations and remissions in each diurnal period.—*Med. Reports*, p. 16.

And Dr. Fordyce, says the similarity between these three kinds has determined practitioners of the greatest eminence, through the whole history of medicine, to consider them as the same disease. Many have thought that in a continued fever the subsequent paroxysm takes place in the hot fit of the prior paroxysm, &c.—(3rd Dissertation, p. 59.)

a heap of putrefying turnips. In a house close to the nuisance, a boy had for two or three weeks been complaining of headache, lassitude, and debility, but had not been placed under any medical care. On the day on which I saw him he had been attacked with epistaxis which continued till his death, on the day following. His skin was covered with small ecchymotic petechiæ. After his death petechial fever appeared in the family, consisting of six persons, and in the adjoining houses, and proved fatal in several instances. It did not spread beyond the locality and subsided in a few weeks. The season of the year (summer), with the other circumstances, were unfavourable to the supposition of contagion.

But it is to sources containing *mixed* organic matters that the experience of all observers point as most efficient in producing continued fever; such are slaughterhouses, obstructed sewers, cesspools, &c. &c. It were needless to add to the details already given of cases originating in these sources.

The modes in which the poison may be applied to the organism are by direct introduction into the circulation, by being taken into the stomach, by inhalation, and by the skin.

Fever, or a disease confessedly bearing a close resemblance to it, has been produced in the lower animals by experiments too well known to need us to dwell upon them, and occasionally the typhoid symptoms which appear in other diseases would seem to be owing to the absorption of putrid matters into the circulation. A case of the kind once occurred under my own observation: a boy aged ten years was received into hospital, labouring apparently under typhoid fever, he sunk after a few days, and on dissection the only lesion discoverable was a carious state of the petrous bone, with a minute opening communicating with the lateral sinus, through which the matter of the carious abscess had passed into the circulation.

It is but rarely that an instance occurs of fever produced by putrid matters taken into the stomach, and the immunity enjoyed by savages, who live much upon putrid flesh, &c., has been referred to by Bancroft and others, not only against the fact, but also against the supposition of putrid animal matters containing a fever poison. It is not difficult to understand that this should be the case, since digestion, an antiseptic process, precedes assimilation, and changes remarkably the matters submitted to its operation; or, as accurately expressed by Liebig, putrid poisons having an *alkaline* reaction are rendered inert by the acids contained in the stomach, while these exert no such power over poisonous sausages which have an *acid* reaction. But this rule is not without some exceptions. In Dr. Christison's work on poisons is a report of a case which occurred in Stockport in the year 1830, of a family of five persons who were poisoned with broth made of putrid beef; in three instances the disease produced was severe, and in one fatal. It is worthy of remark (and is in accordance with the mode of action of a *morbid poison*) that in the worst cases the illness did not commence till the second, and (in the fatal case) the third day after the meal. A case is somewhere narrated of a regiment in which putrid fever prevailed, and in which the disease was checked upon a discovery being made that the water used for drinking was drawn from a well in which some bodies were lying in a state of putrefaction.

Dr. Copland\* remarks upon the effects of drinking the water of the Seine at Paris, and Dr. Hancock observes, that it has been frequently remarked that this water produces diarrhœa in every one except the Parisian accustomed to the use of it. † Dr. Tweedie refers to the history of a fever ascribed to the combined effect of drinking putrid water and the emanations from the same—and others ascribe

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\* Dictionary of Practical Medicine, art. Endemic Influences.

† Cyclopædia of Practical Medicine, art. Endemic Diseases.

the putrid fevers of Paris to the fact that "there are numerous wells in that city from which many of the inhabitants derive their whole supply of water, not a few of which are situated in the very neighbourhood where the 'fosses' are the worst constructed and the least attended to; the urine, therefore, permeating the soil must necessarily contaminate the springs from which these wells are fed."\*

The evidence given before the committee on the health of towns, by Mr. J. B. Wood, bears upon this question. After stating (qs. 2150-4) that 31,000 persons live in the cellars of Liverpool—forming two-thirds of the working population—he states that, "in the districts in which these cellars are situated, there is a great deal of broken ground in which there are pits; the water accumulates in these pits, and of course at the fall of the year there is a good deal of water in them, in which there have been thrown dead dogs and cats and a great many offensive articles. This water is nevertheless used for culinary purposes. I could not believe this at first, I thought it was only used for washing, but I found it was used by the poorer inhabitants for culinary purposes."

The change produced in the fluids and solids of an animal by over driving seems to be capable of becoming a cause of disease in the human body. In the remarkable case given by Andral from Du Hamel it does not appear that fever, strictly speaking, was produced. The effect rather resembled hospital gangrene; but an instance is recorded of typhous fever following from eating the flesh of animals under similar circumstances. It is thus quoted by Dr. Gross: † "A few years ago a number of fattened cattle were driven into one of the New England cities, and having been pressed too hard in a sultry day were so overheated that some of them became quite exhausted. In this condition they were slaughtered, and the consequence was, as is stated by the reporter of the case, Dr. Fountain, that nearly all who partook of their flesh were seized with typhous fever."

These and similar observations would seem to shew that the morbid poison, the product of putrefactive decomposition, may be received into the system through the stomach, more especially if presented in the fluid form; but there is every reason to conclude that fever is but seldom produced in this way, and that the general mode of introduction is through the respiration of the gaseous exhalations, which, as we have seen, are found upon their being collected and condensed to contain animalized matter in the state of progress to decay, whose power of producing disease, in those exposed to their influence, has been questioned and is by many denied, but appears to be proved by evidence of a very satisfactory nature, and which applies with most force to cases occurring under circumstances unfavourable to the action of contagion.

#### SECT. IV.—On the Mode of Action of the Poison.

This does not appear to be attributable to its chemical qualities, but to its condition. It is the power of communicating an action, since there can be no doubt that its effects continue to be produced equally after the removal as during the presence of the cause, when once this cause has impressed its mode of action upon the organism. What the mode of this impression is, and what part of the system is the subject of it in the first instance, we have now to enquire, as also into the order of the phenomena subsequently produced and constituting the formed disease.

The generally received opinion seems to be that the nervous system is the

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\* Medico-Chirurg. Review, vol. 6.

† Pathological Anatomy, vol. 1, p. 223.

subject of the first morbid impression, and its derangements the first in the morbid series constituting fever.

This doctrine is thus maintained by Dr. Southwood Smith\*—"The immediate exciting cause of fever is a poison which operates primarily and specifically upon the brain and spinal chord. The diseased state into which these organs are brought by the operation of the poison, deprives them of the power of communicating to the system that supply of stimulus, (nervous and sensorial influence), which is requisite to maintain the functions of the economy in the state of health. The organs, the seats of the functions, deprived of their supply of nervous influence, become deranged, the derangement in each taking place in a fixed order and in a determinate manner.

Subsequently to the nervous and the sensorial, the organs the next to suffer are those of the circulation, then those of respiration, and, ultimately, those which belong to secretion and excretion. The condition of the nervous system, which produces this derangement in this circle of organs, occasions further, in that portion of the circulating system which consists of the capillary blood-vessels, that peculiar state which constitutes inflammation: hence inflammation is almost always established in one or more of the organs comprehended in the febrile circle and sometimes in all of them." In another passage the same writer says—"The more closely and extensively the subject is investigated the more clear and satisfactory the evidence becomes, that the great primary cause of fever is a poison, the operation of which, like that of some other poisons, the nature of which is better understood and the action of which has been more completely examined, is ascertained to be upon the nervous system. How these poisons act upon the nervous system we do not know, nor can we possibly know as long as we remain so profoundly ignorant of the nature of the action of the nervous system in the state of health."

It will be seen that Dr. Smith's argument, like that of others already examined, is rested upon a fallacious analogy to certain other poisons, and like these is open to the fatal objection, that such poisons really produce their effect upon the nervous system subsequently to their diffusion through the blood. It moreover lacks the support derived in the former cases from the occurrence of a nervous shock, since such rarely, if ever, attends exposure to the paludal sources of fever. On the other hand, some of the arguments for a modified humoral theory before adduced, apply with greater force to this than the animal miasm, and additional ones are not wanting to strengthen the proofs that all derangements of function in fever are subsequent to the introduction of the poison into the blood, and the consequent vitiation of that fluid. For, its latency is even more remarkable than that of the animal infection of typhus, while a close observation of the state of the patient, during this period, will shew a derangement of the secreting and excreting functions, which seem to be labouring to rid the system of the poison, or of those products which it has a tendency to generate in the blood; again, we can not unfrequently trace the abrupt termination of this period, and the supervention of formed disease to a suspension of the depuratory action, by cold, intemperance, or any other cause which disturbs the order of the excreting functions and arrests the elimination of the morbid product. Thus, in an exquisitely marked case of paludal fever, which was lately under my care and which terminated fatally after large evacuations of blood from the bowels, it was remarked spontaneously by the patient's friends that, for six weeks before fever commenced, not only had he suffered from capricious appetite and irregular bowels, but that a remarkable thick copious deposit had been constantly present in his urine. During this period he had been living and sleeping in immediate proximity to a collection of filth,

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\* Treatise on Fever.

which at times filled the house (in other respects a cleanly and comfortable one) with an insufferable putrid effluvia.

This instance also illustrates the cumulative property of the poison, which is much more remarkable than that of the animal infection. Unlike the latter, which is often most severe upon its first introduction into a family, the poison of malaria seems commonly to affect each successive patient more severely than the preceding.

To what can this be attributed but to the accumulation in the blood consequent upon longer continued imbibition of the poison? This is similar to the explanation offered by Cruveilhier, of the general incurability of phlebitis from the absorption of pus. Experiments have shewn that, from a single injection of putrid pus into the vein, an animal may, after copious evacuations, recover; he therefore concludes that similar success might attend the evacuant treatment of phlebitis, did not the renewal of the sources of infection follow the incessant renewal of the pus. But we can not only detect the presence and agency of the poison in the circulation through the deranged excretions, but also occasionally in the physical changes of the blood itself previous to the occurrence of formed disease. The following observations of Dr. Potter\* on this subject, are highly interesting and important, and from the care and accuracy with which they appear to have been made, are entitled to great weight in the discussion of the mode of access of fevers arising from malaria. He says, "it was remarkable in all cases in which it was deemed expedient to bleed, the blood wore the same general appearances. After a separation had taken place, the serum assumed a yellow shade: often a deep orange, and a portion of the red globules was invariably precipitated.

It occurred to me that if the remote cause resided in a common atmosphere, the blood of all who had inhaled it a certain time would exhibit similar phenomena. It accorded with the pathology I had conceived, to conclude, that all who lived in an atmosphere so impregnated were constantly predisposed, and that an additional or exciting cause only would be required to develop the symptoms and form. To ascertain the appearances of the blood in subjects apparently in good health, I drew it from five persons who had lived during the whole season in the most infected parts of the city, and who were, to every external appearance and inward feeling, in perfect health. The appearance of the blood could not be distinguished from that of those who laboured under the most inveterate grades of the disease. As this experiment might have been considered inconclusive unless the blood could be compared with that of those who lived in a purer atmosphere, remote from the evolution of miasmata, I selected an equal number of persons who lived on the hills of Baltimore County, and drew from them ten ounces of blood. The contrast in the appearances was so manifest that no cause for hesitation remained. There was neither a preternaturally yellow serum, nor a red precipitate; the appearances were such as we find in the blood of healthy subjects. A young gentleman, having returned from the western part of Pennsylvania on the 10th of September, I drew a few ounces of blood from a vein on that day; it discovered no deviation from that of other healthy persons. He remained in my family till the 26th of the month, and on that day I repeated the bloodletting. The serum had assumed a deep yellow hue, and a copious precipitate of red globules had fallen to the bottom of the

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\* Quoted by Dr. Tweedie, Art. Fever, Cyclopædia of Practical Medicine.

Dr. Tweedie's own expressed opinion is "whether the opinion of the older writers, that in fevers originating from contagion, the contagious principle alters the properties of the blood be correct or not, we certainly think the strong analogy in the cases alluded to tends to confirm the supposition of typhoid fevers originating in diseased blood."

receiving vessel. Of the six persons whose blood assumed those indications of the remote cause, four were seized with fever during the epidemic; the other two escaped any formal attack, but complained occasionally of headache, nausea, and other indications of disease."

Similar experiments were instituted by Dr. Stevens, and with a like result, the blood being black in colour, and evidently deranged in its properties previous to the commencement of the fever.

It might almost be considered unnecessary to strengthen the inference from such facts as these, by observing on the effect upon the blood of the gases, evolved from sources which we consider the evidence already adduced proves to contain a fever poison, when these are presented in a sufficient degree of concentration to produce rapidly fatal effects.

Describing the consequences of exposure to the emanations from Parisian privies, Dr. Christison says:—"The appearances in the bodies of persons killed by these emanations are *fluidity and blackness of the blood*, a dark tint of all the internal vascular organs, annihilation of the contractility of the muscles, more or less redness of the bronchial tubes and *secretion of brown mucus there as well as in the nostrils*, gorging of the lungs, an odour throughout the whole viscera, like that of decayed fish, and a tendency to early putrefaction."

With these and similar facts before us, we cannot agree in the sweeping decision of Dr. Smith, that "changes in the fluids can only be second in the series of morbid events: they can never hold the first place in that series: they can never be antecedents or first causes, but merely sequents or effects."\* We rather think that the evidence existing on the subject, if fairly examined, points to the blood as the seat of the primary operations of the morbid agent, and the subject of the changes which it is a part of its condition necessarily to produce. And regarding all derangements of the functions occurring in fever as the consequences of the molecular changes in that fluid, we proceed to examine into the order in which these consecutive phenomena occur—the mode of their production, and their mutual dependence one upon another.

Supposing Dr. Smith's to be a fair exposition of the views generally entertained in this country we find, upon reverting to his chapter on the theory of fever, that the doctrine maintained is, that subsequently to the supposed primary nervous impression, "the organs the next to suffer are those of the circulation, then those of respiration; and ultimately those which belong to secretion and excretion. The condition of the nervous system which produces this derangement in this circle of organs, occasions further in that portion of the circulating system, which consists of the capillary bloodvessels, that peculiar state which constitutes inflammation: hence inflammation is almost always established in one or more of the organs comprehended in the febrile circle and sometimes in all of them." If this passage admits of a precise construction it must be that in consequence of a certain impression on the nervous system a state of general inflammation exists (or at least a state approaching to inflammation) in the capillaries of all the organs, and which is equally likely to become actual inflammation in any of them during fever. Without denying this frequency of visceral inflammation in fever, or the great necessity of recognising and combatting it, it may be reasonably doubted if so variable and non-essential an occurrence—with one exception—or one so dependent for its existence and its seat upon accidental causes—as season, atmosphere, epidemic influences, states of constitution, &c.—as these local inflammations are, can be properly admitted into the discussion of a theory of fever. Either this combination of inflammation in some organ, with a peculiar state of the nervous system, is necessary to constitute fever, or it is not. That it is, seems unlikely, since morbid anatomy fails to detect it in a large pro-

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\* On Fever, p. 330.

portion of instances. If it be not then according to this theory, nothing will remain but a certain peculiar affection of the nervous system to account for the phenomena of fever. But in the kind of fever under consideration there is a local affection generally regarded as inflammatory, and which is so constantly present and found to exercise so great an influence on the disease as to have been considered by some eminent pathologists to be the essential cause of typhoid fever. It is that affection of the mucous glands of the small intestines described under the name of Dothin-enteritis. This affection claims a special consideration, since no one can impartially examine the evidence put forward in support of their views of the pathology of fever by Louis and Chomel, in France, or the cases incidentally published in the writings of Bright, Tweedie, Smith, Graves and Stokes, Hodgkin, &c. in this country, without being convinced that in some forms of fever—which farther examination will shew to be paludal fever—this dothin-enteritis is a constant and a most important complication, if indeed it be not the pathological cause of the disease.

But if we seek an explanation of its occurrence in Dr. Smith's theory, we are first at a loss to know why an impression on the brain and spinal chord should lead to consequent inflammation in a part the most remote of any from their influence, and whose functions are under the control of a different portion of the nervous system. Then, in very many cases, we find that the symptoms of intestinal irritation preceded this nervous impression—that in others, in which death took place at an early period of fever, it was found far advanced—as by Louis so early as the 8th day—and could not therefore be regarded as a secondary phenomenon. And that in other cases, in which the poison was presented in so concentrated a form that death took place before fever could be established, the glands of Peyer exhibited the same appearance as in that disease. The following interesting case of this kind is given by Dr. Christison.

In August last, twenty-two boys, living at a boarding-school at Clapham, were seized in the course of three or four hours with alarming symptoms of violent irritation in the stomach and bowels, subsultus of the muscles of the arms, and excessive prostration of strength. Another had been similarly attacked three days before. This child died in twenty-five, and one of the others in twenty-three hours. On examination after death, the Peyerian glands of the intestines were found in the former case enlarged, and, as it were, tuberculated: in the other, there were also ulcers of the mucous coat of the small intestines, and softening of that coat in the colon. A suspicion of poisoning having naturally arisen, the various utensils and articles of food used by the family were examined, but without success. And the only circumstance which appeared to explain the accident was, that two days before the first child took ill, a foul cesspool had been opened, and the materials diffused over a garden adjoining the childrens' play-ground. This was considered a sufficient cause of the disease, by Dr. Spurgin and Messrs. Angus and Saunders of Clapham, as well as by Drs. Latham and Chambers and Mr. Pearson, of London, who personally examined the whole particulars." There cannot, we think, be a doubt that their opinion was correct, and that nothing but the rapid termination prevented the development of the phenomena of fever in these cases; but in fairness to Dr. Christison, it should be added, that he considers "this opinion cannot be received with confidence by the medical jurist and the physician, since it is not supported by any previous account of the effects of sulphuretted hydrogen." Perhaps these cases may receive some confirmation from the following report (certainly not a fall one) of a similar accident by Dr. Arnott.\* "In a mews behind Bedford-square, a stable had been let for a time to a butcher, and a heap of dung had been formed at the door, containing pigs' offal, pigeons' dung, &c. During the act of

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\* Fourth Report of Poor Law Commissioners, p 106.

removing this heap, a coachman's wife and her three children, of an adjoining stable, sat for a time at an open window nearly over the place until the insufferable stench drove them away: two of the poor children died of the poison before 36 hours, and the mother and other child narrowly escaped."

In Dr. Christison's cases the description of the appearances of Peyer's glands exactly corresponds (especially the first case) with Dr. Bright's description, and with the representation given in one of the plates in his great work. As also with the minute investigations of Dr. Staberoh, who regards the first stage of the follicular affection, as "an infiltration into the mucous coat, and especially the crypts called Peyerian glands," but also taking place, as he has repeatedly seen it, in different parts of the colon, "and to which he considers the inflammation of the mucous membrane secondary."—(Dublin Journal, Vol. 13.)

But farther—if dothin-enterite were a consequence of disordered circulation depending upon an impression on the brain and spinal chord, we might expect to meet it in other cases in which these organs are engaged, as in the periodic fevers and in typhus: but we do not, nor can any other local inflammation be named as similarly constant in these diseases, and filling its place in the "febrile circle." On the contrary, M'Cartney, Armstrong, and others, have fully proved that the vascular congestion commonly found in these diseases is not of an inflammatory nature, and that, though it may remotely give rise in certain cases to an inflammatory re-action for its removal, it is yet a distinct pathological condition.\*

Two other opinions may be entertained of the relation of dothin-enteritis to fever. One, that it is the primary cause: that fever is the sum of the symptoms of this inflammation—the other, that it is the specific effect of the septic poison from which typhoid fever originates, and like the other symptoms of this disease, merely a link in the chain of sequences constituting fever.

Perhaps the strongest arguments for the first of these opinions are the large proportion of cases of typhoid fever in which it is found to exist,—the influence it exercises upon the severity of the disease, and the effects of antiphlogistic remedies, more especially of topical blood-letting. It will be presently seen that the two first circumstances are equally well explained upon the second opinion. With reference to the effects of blood-letting it must be admitted that a very considerable amelioration of symptoms, and not unfrequently their total removal, has followed timely and free abstraction of blood, especially by leeches applied over the affected intestine, and not only are the tenderness and pain in the part, with the meteorism and diarrhoea thus relieved, but the head-ache, thirst, pulse, and other general symptoms commonly undergo at least a temporary and partial improvement. But it may be doubted whether this is to be attributed so much to the removal of inflammation as to an impression made upon the general disease, by the new movement given to the circulation in general by the smallest local abstraction of blood, and which is felt in every part of the system.

One or two circumstances may be cited in proof of this dynamic effect of bleeding, and to illustrate its application to the present case—1st, the well-known fact that the impression made upon the central organ of the circulation by the bleeding from a few leech-bites is totally disproportionate to the quantity taken away. 2nd. The effect of leeching, or bleeding in some other disorders in which no supposition of inflammation could exist. In amenorrhœa, for instance, we have known the disorder of several months' standing removed by the application of a few leeches to the inguinal region before the leeches were themselves removed. In ague also, an effect almost equally marked may be sometimes produced by the same means. The following short case illustrates this. C. F.—, æt. 20, was admitted into the Navan Hospital on the 22nd of February, labour-

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\* For Dr. M'Cartney's observations, see Dub. Med. Trans. Vol. 2, p. 574.



ing under tertian ague. The fit comes on two hours earlier at each period. Has some tenderness on pressure, and fullness of epigastrium, thirst, tongue red at tip and edges—previous to entering hospital took two emetics and an aperient. A fit took place about 3 a. m. on the 21st, and might be expected to recur at one a. m. on the 23rd. I ordered 12 leeches to be applied on the evening of the 22nd to the epigastrium, and a draught to be taken at bed-time, containing 20 drops of laudanum. The fit occurred at 5 a. m. 4 hours later than it was expected. On the 25th it came on at 7, and the leeching being repeated on the evening of the 26th, he sweated copiously during the night, and had no return of the fit. There was a slight return of it five days after, but from this time he got rapidly well.

Without entering farther into the discussion of the theory, that dothineritis is the cause of the febrile phenomena, we pass on to submit certain considerations in support of the view which regards it as an effect not of the fever or of the state of the nervous and circulating systems produced by the fever, but as the direct effect of the poison itself—as one (probably the first) of the links in the chain of sequences, constituting fever, and one upon the occurrence of which some of the others may probably depend. This view approaches nearer to that of Louis, who is of opinion that the affection of the follicles occurs in the beginning of the disease, than to that of Chomel, who seems inclined to admit its classification among the secondary inflammations, but differs from the definition of the former eminent pathologist, inasmuch as it seeks to establish the agency of a morbid poison as the cause of fever, in place of his decision “that the cause is unknown.” The following extract from his summary of the diagnostic symptoms of typhoid fever is important, as containing two particulars which we shall find to have a bearing upon this inquiry.

“*Maladie aiguë accompagnée d'un mouvement fébrile plus ou moins intense, variable dans sa durée; propre aux jeunes sujets, principalement à ceux qui se trouvent depuis peu de temps au milieu de circonstances nouvelles pour eux, dont la cause est inconnue; debutant par un frisson violent, l'anorexia, la soif, et dans la très grande majorité des cas par des coliques et la diarrhée,*” &c.

The two circumstances here mentioned by Louis, of the subjects of typhoid fever being those newly exposed to influences, the nature of which he concludes are not known—and the diarrhoea which ushers in the complaint,—we conceive tend to support the theory that the intestinal affection is a consequence of the effort made by the excreting organs—more especially the liver—to rid the system of the poison which has been introduced into the blood. It is easy to conceive that the native of Paris, born and brought up in the atmosphere of its fumes, and drinking all his life the tainted waters of its wells and river, may habitually eliminate from the blood such products as are thus taken in unfit for assimilation or nutriment, and that to a constitution unused to such a task the consequence of taking into the circulation the same decomposing substances should be different. And, if we aid our conception of this fact by a reference to what takes place in the different classes of persons exposed to malaria of other kinds in temperate climates, we shall see why intestinal affections should be among the first consequences of the process; for it will appear that the liver is the organ by means of whose excretions the poison is attempted to be got rid of, and according to the facility with which this is performed or otherwise, will be the chances of escape or the contrary, from the effects of the poison. It is well known that, while the lungs of a native of a warm climate are liable to become diseased upon removal to a cold one, the liver is the organ prone to suffer upon the inhabitant of a cold removing to a warm climate. It is also found that the stranger from a colder country will rapidly contract fever from exposure to malaria in a temperate climate, while the person newly arrived from a warm one will not be similarly affected until that change in the order of his functions termed acclimatization has taken place, and he becomes assimilated in habits to the inhabitant of the same latitude.

(To be concluded in our next.)

The following are the data upon which the proof of the connexion of diseased mucous follicles with the peculiar effects of a morbid poison upon the biliary excretion, may be rested.

1st. It may be considered as admitted, that the special characters of substances fitted for assimilation are absence of active chemical qualities, and the capability of yielding to transformations; and that every substance may be considered as nutriment, which loses its former properties when acted on by the vital principle, and does not exercise a chemical action upon the living organ.

2ndly. That in the progress of the functions of nutrition, certain chemical and organic substances are produced, and from time to time are present in the blood; which products it is the office of the different excreting organs to discharge from that fluid,—the relative activity of these organs depending partly upon the matter to be eliminated, and partly on other circumstances; thus we have seen that, in one situation the lungs assume a disproportionate activity, in others, the liver, &c.

The foregoing propositions being admitted, the following may be regarded as convertible from them. If substances be introduced into the blood which are not capable of assimilation or of affording nutriment—whether from their chemical qualities or from their condition (of decomposition)—it will follow that, instead of these suffering the transformations which food undergoes to become assimilated, the blood will undergo their transformation and disease will be produced.

Also, that numerous modifications in the composition and condition of the compounds, produced from the elements of the blood, may be the immediate result of the introduction into it of these substances, and a change in the quality of the excretions may thus be the first indication of the action of the poison, as well as of the effort made to expel it.

Numerous facts and observations tend to shew that, in the case of organic or putrid poisons, the *liver* is the organ by whose excretions an attempt is made to rid the blood of the new products thus formed in it.

As first—by a reference to the experiments of injection of putrid pus, &c., into the veins of animals, performed by Magendie, Gaspard, Cruveilhier, &c., it will be seen that when the animal recovered it was after copious discharges of a vitiated character from the bowels; to these discharges the last-named writer attributes the recovery, and adds, that it is a fundamental fact of pathology that the intestinal canal is chiefly affected in diseases caused by miasmata.

Again, if we refer to the published cases of poisoning from putrid ingesta, we see that, besides those of irritant poisoning in which the rapid rejection of the substances was followed by recovery, there is another class in which, after an interval allowing of the absorption of the poison into the circulation, a different set of symptoms followed, as in the following from Dr. Christison's work on poisons:—"A family of five persons took for dinner broth made of beef, which owing to its black colour the master of the family had previously said to his wife he thought bad and unfit for use.

In the course of some hours two boys were attacked with sickness and vomiting, but appear to have got soon well, probably from the early discharge of the poison. Next morning a washer-woman, who had dined with the family, was seized with violent pain in the bowels, diarrhœa, racking pains, and weakness in the limbs, and did not recover for ten days. On the evening of the second day the master of the house was similarly affected and was ill for a fortnight. And a day later, his wife was also seized with a similar disorder, preceded by soreness of the throat and tongue and difficulty of swallowing, and ending fatally in fourteen days."

It is worthy of notice that the severity of these cases was in proportion to the interval allowed for absorption of the poison—altogether their resemblance to the description of the symptoms of typhoid fever, quoted from Louis, is re-

markable. If we enquire why the mucous glands of the lower portion of the ileum, are more than other parts of the intestine liable to suffer from this peculiar derangement of the biliary excretion, we shall see reason to think the cause is the same as would explain their existence in greater number there than elsewhere, and that this is probably owing to the fact of a second digestion or chymification being performed in the cæcum, during which, it is believed by some physiologists,\* that the entrance to the large intestine is closed, and bile collected in the lower portion of the small intestine, which does not enter the cæcum till the secondary chymification is completed. The effect of such a retention of an acrid and depraved secretion must be obviously to produce irritation in the part subjected to its influence, and the same deranged products of secretion, continuing through much of the duration of the fever, we can account for this affection not seeming to be limited to any portion of that period, but why commencing with it,—frequently even preceding it, it ordinarily survives the continuance of the most prolonged disease.

This explanation also accounts for the disease in these glands being found farthest advanced nearest to the termination of the intestine—for perforation occurring almost invariably close to the cæcum—for the lymphatic glands of the mesentery, corresponding to the diseased follicles, becoming diseased—and for the severity of these affections bearing a direct proportion to the severity of the fever, and, as it would appear, to the amount of the poison imbibed into the system.

This view of the relation of diseased follicles to the action of the septic poison differs both from that which regards dothineritis as the cause of fever, and from that which assigns to it a merely secondary place in this affection. To the latter are opposed the extremely frequent, and early occurrence of abdominal symptoms (as diarrhœa) in the typhoid form of fever. With the post mortem appearances in subjects examined at an early stage; while the former is irreconcilable with the occasional absence of the lesion, the frequent want of correspondence between its amount and the gravity and fatal result of the fever, (a correspondence which should exist if the other phenomena of fever were but the sympathies of the affection of the follicles,) with the occasional persistence of the local disease after the fever has subsided, and with the presence (almost equally frequent in typhoid fever) of other lesions which cannot be considered sympathetic of this, but must be ascribed either to the immediate operation of the poison, or to that state of the blood produced by it; such are the softening of the spleen, liver and heart, and the inflammatory affection of the brain and thoracic viscera.

These pathological changes, as well as the derangements of function constituting the *febrile state*, will probably be best explained by some such hypothesis as that advanced by Dr. Hodgkin, which supposes the febrile state to depend upon a suspension, or at least very considerable interruption of that process by which, during health, the various parts of the system are continually undergoing a change, the old materials being removed while others are substituted in their place."† This hypothesis will be found perfectly in accordance with that of the

\* Schultz quoted by Müller.

† Lectures on Mucous Membranes, Lect. 23.

Dr. Hodgkin's hypothesis seems to explain the great difference in the fatality of fever as affecting the higher and lower classes of society, since by the mode of life of the former, more nutriment being taken into the system, and more organic matters constantly present in the blood, an arrest of the process by which they are eliminated, must naturally be followed by more complete deterioration of the mass of circulating fluid, and more serious injury to the functions and structure of the organs supplied by it.

action of a morbid poison upon the blood, since it will be the natural effect of the molecular change produced in that fluid by the decomposing particles of the poison so to modify it as to render it unfit to undergo the capillary attractions constituting the processes of interstitial absorption, nutrition, and secretion; and thus instead of Dr. Smith's formula of the order of successive derangements in fever—namely, derangement of innervation—then of circulation, and lastly of secretions and of the animal fluids; the more correct one will probably be, first the molecular change in the blood, then the suspension or modification of the interstitial processes—or change of particles—then certain derangements of innervation and of the heart's action, and the result—formed fever.

According to this view, dothineritis is one of the phenomena of the second stage in the action of the poison, and immediately consequent upon certain modifications of the biliary (and probably also the intestinal) secretion. Its occurrence cannot be considered *essential* to typhoid fever, as the contamination of the blood may cause the molecular changes upon which the foregoing hypothesis supposes fever to depend without this—albeit its absence in typhoid fever is very rare—while, on the other hand, it may exist without fever necessarily following, for we frequently see that, of a number of individuals exposed to the same source of miasm, some will suffer an attack of typhoid fever, while others will be affected with diarrhoea or dysentery: a fact which is explained by a reference to those experiments of Gaspard, in which the recovery of the animal after putrid injection, was attended with profuse and offensive discharges—seemingly the mode of relieving the blood from the presence of the poison.

Reference has been already made to another set of cases, in which dothineritis occurs without fever: those namely, in which the poison was so concentrated as to produce a rapidly fatal effect, and where examination after a diarrhoea of only a day or two shewed the same peculiar affection of the follicles as in typhoid fever; the inference from such cases taken conjointly with those of fever from the same causes without dothineritis, must be that this lesion is *neither cause nor effect of the fever, but a concurrent and contingent effect of the poison*. Most of the other pathological changes of fever are to be explained by the alterations in the constitution of the blood. Such is evidently the cause of the softening of the spleen so invariably present in typhoid fever, and such a little consideration will shew to be the cause of the congestive character of the typhoid inflammations: for the occurrence most likely to follow such a change in the molecular attractions of the blood as will interfere with its capillary circulation, is *stagnation in this part of the system*, of which the consequences are venous congestion, passive hæmorrhages, and the softening of parenchymatous organs. The stagnant character of the typhoid pneumonia has been remarked by many; thus Dr. Williams says, "it may be almost a question whether in these cases the local disease in the lungs is not rather a congestion of blood in an altered state than an inflammation, and it is very commonly the sequel rather than the cause of the fever,"\*—an opinion which seems fully warranted by dissection, as well as consistent. Huxham, with the modifications of the physical signs in this form of disease,† was so much struck with this connexion of the local affection and diseased blood, that he compared the state of the latter in these cases to the *scorbutic habit*; and Andral countenances this analogy in the following passages. "The ataxo-adyamic fever recognises for its commencement some alteration of the blood, whether this alteration may have taken place spontaneously, and produce a sort of acute scorbutus, or it may follow the introduction of deleterious agents, as miasms, virus, matters in a state of putrefaction; these agents after having modified the composition of

\* Article Pneumonia, Cyclop. Prac. Med.

† See my Observations on Typhoid Pneumonia, Dublin Journal, V. 7, for several dissections of this disease.

the blood come to poison the nervous centres. Then the disease is everywhere, where blood and nerves are to be found, and in every part lesions may occur which perform but a secondary part in the production of the symptoms.\*

Again—"Congestions of the parenchymatous tissues and membranes are tolerably frequent during the course of fevers. These congestions seem to depend on the rupture of equilibrium between the globules and fibrine; they are very frequent in typhoid and typhus fevers, and small-pox; the spleen and other parenchymatous tissues are usually congested in these diseases, and a diminution of fibrine as compared with the globules (whether absolute or relative) is the alteration of the blood observed in these maladies.

"The ancients concluded from the phenomena just mentioned that in the diseases in question, the blood is altered, and that its elements have a great tendency to separate. They designated by the phrase *putridity*, that morbid condition in which the vital powers seem to yield to physical causes, and the blood becomes putrescent. Borden, whose opinions as to the nature of typhoid fever are remarkably sagacious and philosophical, does not hesitate to consider that malady as connected with a general condition of the system, which he designates by the name of *acute scurvy*. This phrase is not inaccurate, so far as regards the condition of the blood. A diminution of the quantity of the coagulable material of the blood is a general fact observed in all great febrile disturbances; thus in miasmatic fevers there is first absorption of the miasma, and immediately after, the only prominent phenomenon is an alteration of the blood. This alteration which occurs in typhoid fever is the effect of some cause as yet unknown."†

Hæmorrhage is well known to be characteristic of typhoid fever. That from the air-passages is enumerated by Chomel among the distinctive symptoms of the disease. Intestinal hæmorrhage is also a frequent and an unfavourable symptom, and indicative of a diseased state of the blood. This hæmorrhage is preceded by stagnation. The softening of viscera is always observed in conjunction with an altered and fluid state of the blood. In some descriptions of softened spleen by Andral and others, the blood contained in it is compared to the lees of wine.

#### SECT. V.—*Characters of the Disease produced by the Putrid Miasm.*

It has been remarked, that a general resemblance may be traced between the disease produced by the infectious animal poison of typhus and the exanthemata; its first and most striking analogy being the almost constant presence of a peculiar eruption. Another particular in which it resembles them and differs from the disease now under consideration is the absence of any constant internal lesion; the pathology of typhus being of a functional or physiological kind, while that of endemic or typhoid fever is anatomical and precise in its nature. The distinctive characters of the two affections may be thus stated. In typhus, a poison is generated by certain changes in the fluids of the living body, which, being received into the blood of a healthy individual, has a tendency to excite in that fluid the transformations from which it has itself arisen, and by which it will be reproduced: a process during which certain phenomena occur, as that of

\* Clinique Medicale Translated, p. 610. Several cases are given, in which all the symptoms of typhoid fever were produced apparently by mental and bodily depression, but after death no lesion was discovered—for a striking case of this acute scorbutus, see Dr. Law's paper before quoted at p. 19.

† Lectures on the Blood, reported in Dublin Medical Press, Aug. 11, and Provincial Medical and Surgical Journal, Aug. 21.

eruption (an effort apparently to free the system from the presence of the poison), and the conclusion of which is marked by the presence in the excretions of the material necessary for the generation anew of the disease in any person into whose blood it may be received. All these phenomena may occur without appreciable change in the structure of any organ, and in fact death may be produced without any morbid appearance beyond that degree of congestion naturally connected with the modification of its processes of nutrition and secretion.

In typhoid fever the events following the introduction of the putrefactive poison are different; it will appear upon examination into these, that no new material of reproduction is generated, that the eruption is not a true exanthema or identical with that of typhus, being later in its appearance, less constant, more scanty, consisting of successive crops rather than persistent and uniform, as in typhus. A marked modification of the molecular changes of the system occurs in this as in every variety of febrile movement, but its continuance is evidently less uniform than in typhus, being subject to alternations and remissions, at times approaching those of the periodic fevers; and the critical change attending its resolution is more gradual and liable to be less certain and complete, as well as to recur by relapse, unlike that of typhus. But the most important distinction consists in the fact that the typhoid miasm has, like other putrid poisons, a tendency to be eliminated from the system through the biliary excretion, in the course of which process a peculiar form of irritation is set up in the alimentary canal, while no such tendency can be asserted of the poison of true typhus, in the majority of cases of which the biliary excretion suffers rather a diminution than otherwise.

But it may be said it is by no means proved that the typhoid affection of Louis and Chomel is of endemic origin, and in order to establish the connexion between miasm as a cause, and fever characterised by dothineritis as the effect, either this must be proved, or it must be made to appear that the fevers which in our own country may be traced to this source are to be distinguished from typhus by the intestinal lesion.

With regard to the French typhoid fever, we are led to infer this conclusion from the following facts: the existence of such miasm in abundance in the fosses, wells, and river of Paris—the almost invariable occurrence of gastro-intestinal affections in those newly-arrived there—the fact that typhoid fever attacks the same class so constantly as to make a change of circumstances regarded as one of the essential causes of the disease—and lastly, the testimony of the most distinguished physicians that it is not propagated by contagion. Let the experience of our large hospitals, with reference to the infection of typhus, be compared with the following statement of Andral. “In Paris, either in the hospitals or out of them, we never recognized in this disease (dothineritis) the slightest appearance of a contagious character. In the hospitals we do not see it transmitted from the individual who brings it from without to those who are lying in the beds next his own; neither do we see that the patients who lie in a bed previously occupied by a person who has recovered from, or who has died of a dothineritis, are attacked by it; neither are the physicians or medical students who come there attacked with it, more particularly those who have had to come in contact with patients labouring under the disease. Out of the hospitals what circumstances are more favourable to contagion than those generally found combined in the case of medical students who attend their companions when affected with typhoid fever? Shut up in a room which in general is very small, they pay them the most assiduous and devoted attention night and day; if the affection were contagious almost all of them would contract it, and yet we do not remember to have seen the disease even once arise in this way in a healthy individual.”\*

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\* Spillan's Clinique Medicale, p. 728.

Louis does not mention contagion in his observation on the causes of the disease, but Dr. Gerrhard states that, in conversation, he informed him that he had never seen a case so communicated.

But the question may be elucidated by an examination of some of the published histories of fevers occurring in this country from exposure to endemic sources, from which it will be seen that in numerous instances these were found to be attended with the characteristic dothineritis of the French typhoid affection. Thus in London, after making every due allowance to the advocate of the exclusive infectiousness of typhus, we must contend that the writings of Dr. Armstrong, Dr. Southwood Smith, and others, prove the frequent occurrence of continued fever from these causes, while the treatise of Dr. Smith shews how large a proportion of the fever of London is of the intestinal kind—having all the characters, symptomatic and anatomical, of the “typhoid affection.” A similar remark may be made of Dr. Tweedie’s work, which contains numerous cases of dothineritis, while it affords strong indirect testimony to the endemic source in the statement as to the period of the year at which the disease prevailed, and its remarkable subsidence under the influence of low temperature, rain, and frost—causes which exert a precisely opposite effect upon contagious typhus.\*

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\* Dr. Tweedie, who is by no means a strong advocate for the malarial origin of fever, remarks, that “cold and wet Summers are always remarked to be comparatively healthy, while disorders of the bowels in such seasons are seldom observed. The number of patients admitted into the Fever Hospital, in the Autumn months of the last three years, establish this principle. In August, September, and October, 1827, there were 205; in the same months of 1828, the numbers were 170; in the Autumn of 1829, only 94 were received. The cause of this progressive diminution is undoubtedly to be traced to the cold wet Summers of the last two seasons.”

A similar remark has been made by many physicians as to Dublin; thus Dr. Percival says, “it has long been observed, that protracted dry weather is peculiarly productive of fever in Dublin; and that rainy weather agrees best with the general health of its inhabitants.” And while he states that the worst forms of typhous fever prevailed at an advanced period of the *Winter*, and were characterised by cerebral congestion, he thus distinctly characterizes the endemic fever: “But the seat of peculiar congestion in the autumnal fever was the inner surface of the intestines, and sometimes the mesenteric organs. The type of this epidemic was more irregular than any other; its invasion more obscure; its progress and duration less defined. The subjects of the disease were often broken down and declining constitutions, in which the digestive organs had been long impaired, &c.” Could any description more resemble that of the dothineritis of Louis? Dr. Davidson, who argues for the identity of the two fevers, meets the above statement of Dr. Tweedie thus:—“An opinion exactly opposed to that of Dr. Tweedie is given by Dr. Armstrong. He states, that in England, typhus is evidently favoured by a low temperature, being most prevalent in the cold seasons of Winter and Spring, generally abating or disappearing, as the heat of Summer advances, and often prevailing to a considerable degree in cold wet Autumns.” This passage is extracted from his work on Typhus, in which Dr. Armstrong advocated the doctrine of contagion. At a later period of his life he taught the exclusively malarial origin of fever, and in his lectures adduces in proof of that doctrine the great prevalence of fever in London during hot seasons, and particularly during the dry hot Summer of 1818. The only mode of reconciling these opposite opinions of the *same observer*, is by supposing that he described the nature of each epidemic correctly as it was presented to him, but not being prepared to recognize a distinction in their nature, was natu-

Again, while Dr. Addison ascribes the numerous cases of synochus and typhus presented at Guy's Hospital to river malaria, Dr. Bright and Dr. Hodgkin prove the identity of many of the cases received into that institution with the disease described by Louis. Similar observations have been made in other places. In Birmingham, dothineritis is stated to be the constant morbid appearance of the few cases of fever which occur; and on referring to Dr. Ward's account, already quoted (p. 43), of a fever which he clearly shews to have arisen from river malaria, we find it stated that it was present in all the fatal cases.

In Dublin, Dr. Cheyne marked three periods occurring in his experience, during which the contagious typhus usually prevalent, gave way to epidemics of intestinal fever, in which evidence of malaria was frequently met with, but infection not so—the pathology was that of dothineritis. These observations are confirmed by others; thus, Drs. Graves and Stokes have published a number of cases of peritonitis from perforating ulcer of the ileum, occurring during one of these periods, 1826-29. Dr. Kennedy states that the glands of Peyer were found by him to be more or less diseased, in a large proportion of the cases of the same period, presenting, as he remarks, a striking contrast in this respect to the fever (contagious typhus) of 1837.\* Dr. Stokes also says, "In the epidemic of 1826 and 1827, we observed the follicular ulcerations (dothineritis of the French) in the greater number of cases. In many instances perforation took place, and the whole group of vital and cadaveric phenomena corresponded almost exactly to the dothineritic affection of the French authors."†

We meet with similar evidence of two fevers in Glasgow. In 1836, says Dr. Stewart, I was much struck with the simultaneous occurrence in the wards of the Glasgow Fever Hospital, of two sets of cases in which the symptoms (however little most of them might seem to differ when viewed individually) presented, when taken collectively, characters so marked as to defy misconception, and to enable the observer to form with the utmost precision the diagnosis of the nature of the disease and the lesions to be revealed by dissection. More particularly it was remarkable to observe, that while in the one disease the affection in those who presented no eruption was so slight and of so short duration as to make it very questionable whether it deserved the name of typhus, and while the fatal cases presented an abundant and generally a profuse eruption; those labouring under the other, which equally and even in a much higher proportion, went on to a fatal termination, rarely presented any, and then only a very scanty eruption. It was further remarkable, that while in the one several successive patients had either been restored to health or fallen victims to the severity of the affection, the disease under which those laboured who lay side by side with them, though characterized by much less urgent symptoms, pursued its gradual course through weeks and months consecutively, and in the majority of cases to a fatal issue. And finally it was more remarkable still, that to complete the contrast already so striking, dissection proved the existence in the one disease of most extensive local lesions, in the other, the absence of all prominent local lesion whatsoever.

Dr. Stewart adds, "that during the Summer and Autumn of 1836, the cases of typhoid fever were numerous, but from the month of November in that year, (at which time both the type and amount of typhus became more formidable) till June, 1838, not more than a dozen cases, if there were even so many, and these at long intervals, were admitted for treatment."‡

This evidence is pretty clear as to the existence of two forms of disease. As

rally led by the evidently non-contagious character of the last observed, to doubt the correctness of his views of the origin of the first.

\* Medical Report of the Cork Street Fever Hospital.

† Lectures, Lond. Med. and Surg. Journal.

‡ On Typhus and Typhoid Fevers, Edin. Med. and Surg. Journ. No. 145.



to the causes, the highest authority in Glasgow on this subject, Dr. Cowan, writing during the period referred to, and with the cases before him, says—"many of the cases of the production and propagation of disease must be ascribed to the habits of our population, to the total want of cleanliness among the lower order of the community, to the absence of ventilation in the more densely peopled districts, and to the accumulation for weeks and months together of filth of every description in our public and private dunghills, to the over-crowded state of the lodging-houses resorted to by the lowest classes, and many other circumstances unnecessary to mention."

In Edinburgh, according to Dr. Christison, "the intestinal affection has repeatedly presented itself in groups—the *constitutio dothinentérica*, to speak in nosographical language, has repeatedly appeared and disappeared as a subordinate or intercurrent epidemic, in the course of the more general epidemic—typhus." And according to Dr. Reid, such cases occur not unfrequently in the country parts of Scotland, and are occasionally sent to the Edinburgh Infirmary.

In Liverpool we are informed they occur in an intercurrent way, as in Glasgow,\* and we need only refer to the evidence before the committee on the health of towns for proof of sufficient endemic causes.

In the Navan Fever Hospital there have been for the last seven years almost always two distinct forms of fever present, one or other occasionally preponderating, so as at times nearly to exclude the other. Thus for the first three years the prominent features were pain, tenderness, and meteorism of the abdomen, diarrhoea, and not unfrequently these symptoms combined with catarrh; several cases of perforation of the ileum occurred towards the close of this period; petechiæ were not frequent and were late in their appearance, and we had few instances of communication by contagion. During the three following years a highly contagious fever prevailed, and the symptoms and treatment were completely different, delirium, subsultus, dysphagia, being the ordinary symptoms, and diarrhoea being rarely met with;—nearly every case presented the measly efflorescence, and instances of contagion were as numerous as they had been rare previously. During the present Summer the prevailing type has been the abdominal fever of the first period, and instances of typhus are infrequent, certainly not a fourth of the whole, and sent exclusively from a district in which the epidemic of last year still lingers.

In America the existence of two kinds of fever has been maintained by Dr. Jackson and Dr. Gerrhard. The former says, in his report on typhoid fever, "it is plain that there are at least two species of continued fever, both in Europe and in this country, and further researches may very possibly shew more."

Dr. Gerrhard states, that "from the information we possess we should conjecture that the two diseases (British or Irish typhus and dothinenteritis), are widely different in their symptoms, anatomical characters, treatment, and mode of transmission."

The following extracts from his able paper will shew that the two forms of fever exist in America at different periods and with distinct characters, just as in our own cities.

"Dothinenteritis is by no means a rare disease in Philadelphia, although less common than at Paris. In the essay alluded to, I established the identity of the anatomical characters and of the symptoms of the fever occurring at Philadelphia with that observed at Paris. . . . The typhous fever which is so common throughout the British dominions, especially in Ireland, is not attended with ulceration or other lesion of the glands of Peyer. . . . For a period of at least ten years, there has been no epidemic of this nature at Philadelphia. In the year 1827, a large

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\* See Dr. Lombard's Letter, Dub. Med. Journal, Vol. X.

number of Irish emigrants were ill of a typhoid fever with ulceration of the small intestines, which was probably dothineritis, and during several successive years there were more or less extensive epidemics of remittent and intermittent fevers occurring in the neighbourhood of the city, but not often extending into the central parts of the town. In the Winter of 1835-6, a form of fever not commonly met with at the hospitals was observed from time to time. It was characterized by pungent burning heat of the skin, dusky aspect of the countenance, subsultus, delirium, with great stupor and prostration, but there was no diarrhoea, and but few symptoms referrible to the alimentary canal. It was the disease which afterwards appeared as an epidemic..... The evidence of contagion was direct and conclusive; three of the principal nurses and about a dozen assistant nurses, besides a number of patients ill with various diseases were taken with the fever. There was only one nurse of a ward in which many of the patients were collected who escaped; but several of his assistants and patients were taken ill. The wards in which the fever-patients were placed were large and well ventilated. The contrast between the two fevers in this respect (their infectious character) is obvious..... *Season of the Year.*—The epidemic began in March and continued until August—there were a few scattering cases afterwards. The Summer was unusually cool, and the Spring and Winter cold..... *Pathological Anatomy.*—In this large number of autopsies, amounting to about fifty, there was but in one case, and that doubtful in its diagnosis, the slightest deviation from the natural appearance of the glands of Peyer..... The fact that the morbid changes pathognomonic of dothineritis are not met with in the typhoid fever, would of itself seem conclusive that the two diseases are no more identical than pneumonia and pleurisy. Although in some respects the two affections are analogous and even similar; the radical difference of anatomical lesions is at least as well marked as the distinction between the symptoms. It is indeed singular that there should be of late a strong tendency to confound two fevers which were regarded as entirely distinct by some of the older physicians."

In the above quotations we see strongly marked the differences of the two affections as to prevailing season—symptoms, pathology, and mode of transmission, and the similarity of each to one or other of the two forms of European fever.

Having endeavoured to collect and arrange the testimony of the best authorities as to the sources of the fever poison, we stop upon the threshold of the extensive inquiry into the laws which regulate the diffusion of the disease in an epidemic form.

To attempt this would require the fullest investigation into the differences and analogies of the two affections, their modes of combination in the same individual, and their occurrence in an intercurrent mode during the same epidemic period, all of which modifications of disease would be found reconcilable with the theory of two poisons; the one having its elements in the blood, and reproduced in it; the other a product of putrefactive decomposition, and not reproduced in the human body; while on the other hand Dr. Davidson's recent essay contains in itself proof that his own theory of a single typhoid poison is not tenable, since it involves the assertion of the identity of two diseases, one of which (according to him) requires to be kept up by an uninterrupted series of cases of contagion, while the other, according to the best observers, never propagates itself by contagion at all. In short, according to this doctrine, we must believe that the same poison, shall at the same time and place, and among the same collection of individuals, produce two diseases totally dissimilar in their mode of access, symptoms, pathology, treatment, and mode of transmission.

# ERRATA.

- Page 1—Line 8, *for* account, *read* amount.  
.. 9—Line 30, *after* on the, *insert* contrary.  
.. 14—Line 32, *for* violent, *read* violet.  
.. 17—Line 17, *for* committed, *read* admitted.  
.. 24—Line 9, *for* receiving, *read* accruing.  
.. 24—Line 23, *for* phlebitis, *read* phlebitis.  
.. 24—Line 48, *for* universally, *read* inversely.  
.. 28—Line 13, *for* Brunais, *read* Burnsius.  
.. 29—Line 14, *for* alteration, *read* alternation.  
.. 30—Line 45, *for* epidemics, *read* epidermis.  
.. 32—Line 36, *for* epidemics, *read* epidermis.

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### Notices to Correspondents.

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The Sequel of Dr. Hudson's valuable Paper on "Fæva" will be concluded in our next Number.

Mr. Ewart's Paper on the "Medical Topography of Alston Moor," has been unavoidably postponed till our July Number.

We have received "Illustrations of the Arteries connected with Aneurysm and Surgical Operations. By G. D. Dermott." This very useful work is now republished by Mr. Hill at the unusually small price of *one guinea*! A valuable boon to students and to surgeons who have not the advantage of constant reference to the dissecting room.

The Anatomy of the Arteries of the Human Body, by Richard Quain, is a work which we cannot praise too highly. Every public professional body should subscribe liberally for it, and every surgeon who can afford it should possess it.

Dr. Willis's Illustrations of Cutaneous Disease are completed. Dr. Anthony Todd Thompson's are in progress. We shall revert, in our next, to both, recommending, in the present instance, each.

Dr. Johnson's work on the "Stream of Human Life," has been translated into the German language, by Dr. Calmann, of Leipzig. We thank Dr. C. for the German copy.

